US009260237B2

(12) **United States Patent**
Brace et al.

(10) **Patent No.: US 9,260,237 B2**
(45) **Date of Patent: Feb. 16, 2016**

(54) **CAP FOR DISPENSING LIQUIDS OR GELS**

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(73) Assignee: **Precision Valve Corporation**, Rye Brook, NY (US)

(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 0 days.

(21) Appl. No.: **14/132,507**

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(65) **Prior Publication Data**

US 2015/0166250 A1 Jun. 18, 2015

(51) **Int. Cl.**

B65D 83/40	(2006.01)
B65D 43/02	(2006.01)
B65D 41/40	(2006.01)
B65D 43/26	(2006.01)
B65D 50/00	(2006.01)
B65D 83/22	(2006.01)
B65D 83/20	(2006.01)

(52) **U.S. Cl.**

CPC ***B65D 83/40*** (2013.01); ***B65D 41/40*** (2013.01); ***B65D 43/0277*** (2013.01); ***B65D 43/26*** (2013.01); ***B65D 50/00*** (2013.01); ***B65D 83/205*** (2013.01); ***B65D 83/206*** (2013.01); ***B65D 83/226*** (2013.01)

(58) **Field of Classification Search**

CPC B65D 83/205; B65D 83/206; B65D 83/22; B65D 83/224; B65D 83/226; B65D 2101/0023; B65D 83/40; B65D 41/40; B65D 43/0277; B65D 43/26; B65D 50/00

USPC 222/402.13, 402.1, 402.11, 402.12, 222/182, 153.07, 153.1, 153.11, 153.13

See application file for complete search history.

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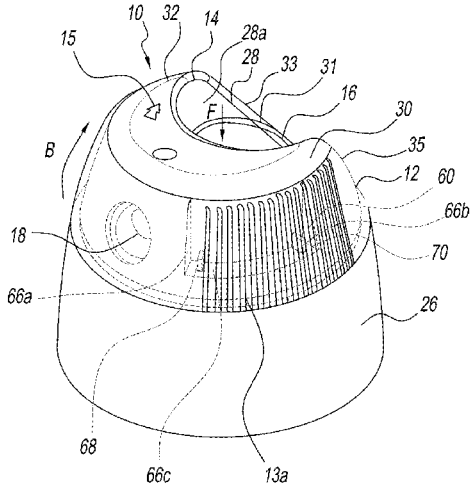
Primary Examiner — Nicholas J Weiss

(74) *Attorney, Agent, or Firm* — Ohlandt, Greeley, Ruggiero & Perle, L.L.P.

(57) **ABSTRACT**

A cap for a container that stores and dispenses fluids or gels that includes a shroud having a shroud wall surrounding an opening and a collar connected on the shroud so that the collar selectively rotates relative to the shroud, is provided. The collar is rotatable between a closed position and an open position. The actuator is connected to the shroud, and has a contact portion. The contact portion is in the opening of the shroud. The actuator is movable in the closed position and the open position by a force that is applied to the contact portion only after removal of a tab.

23 Claims, 46 Drawing Sheets



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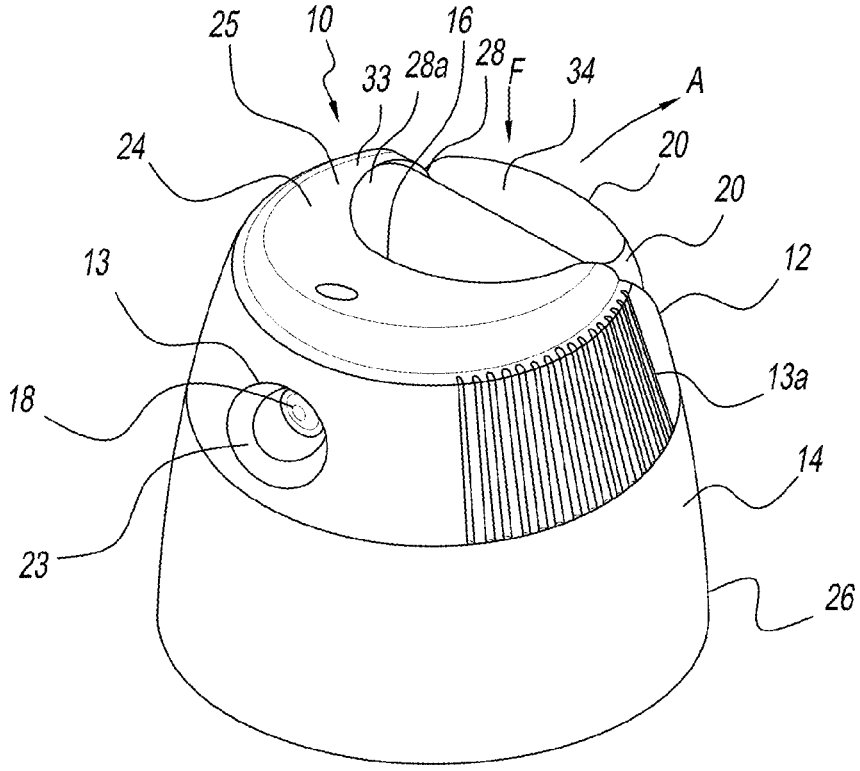
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FIG. 1

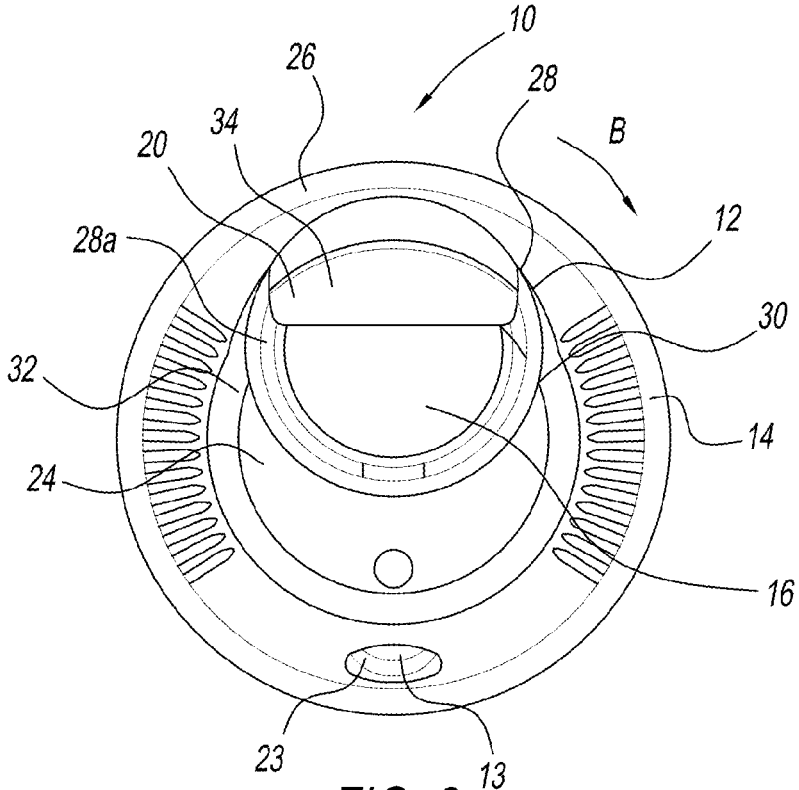
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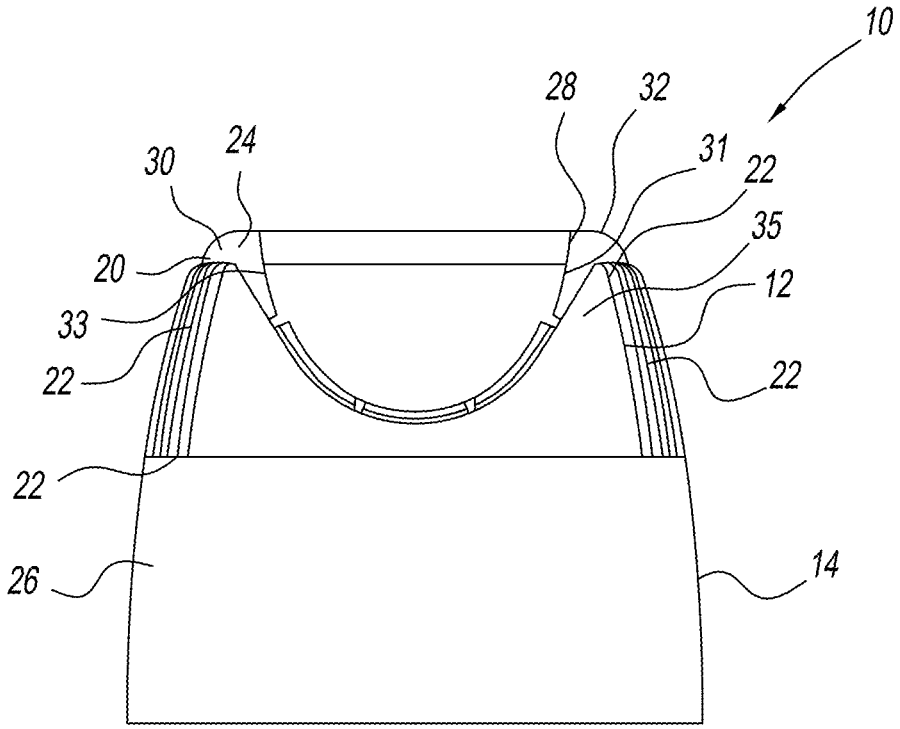
FIG. 2



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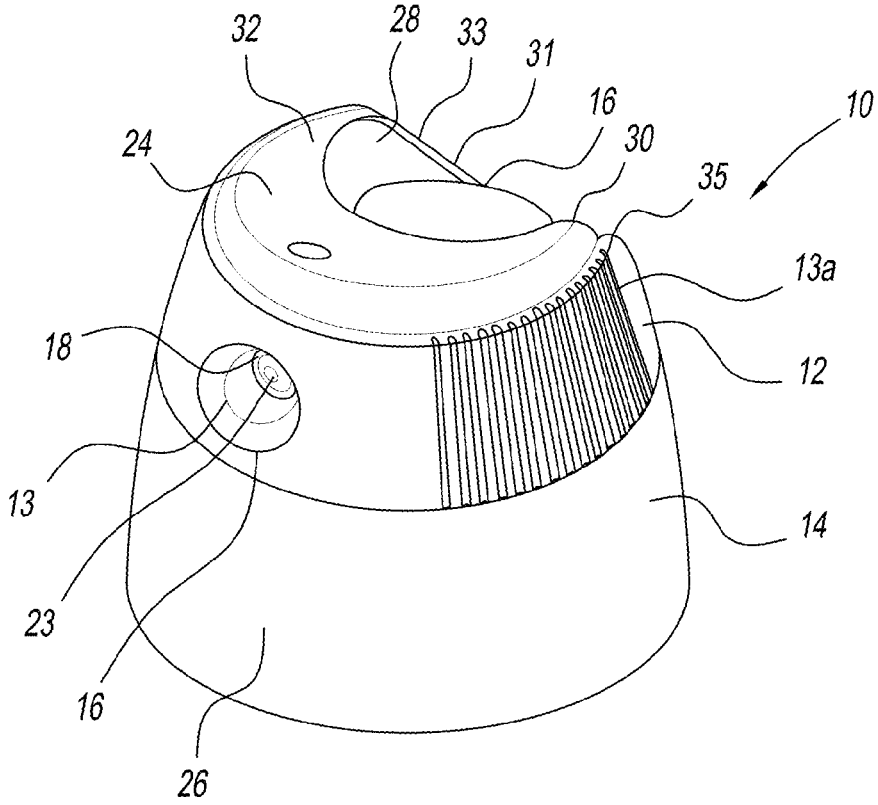
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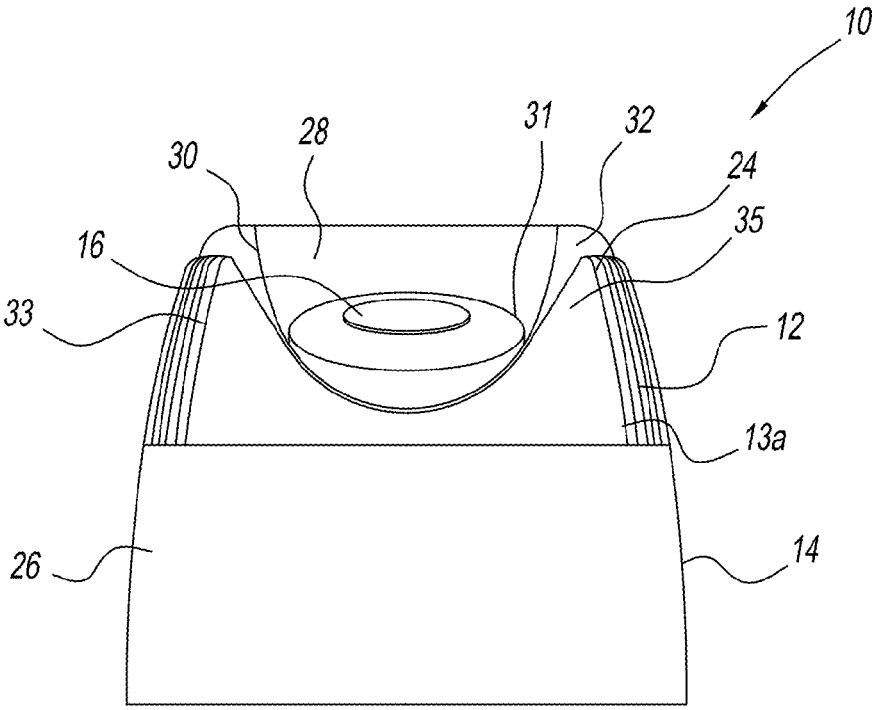
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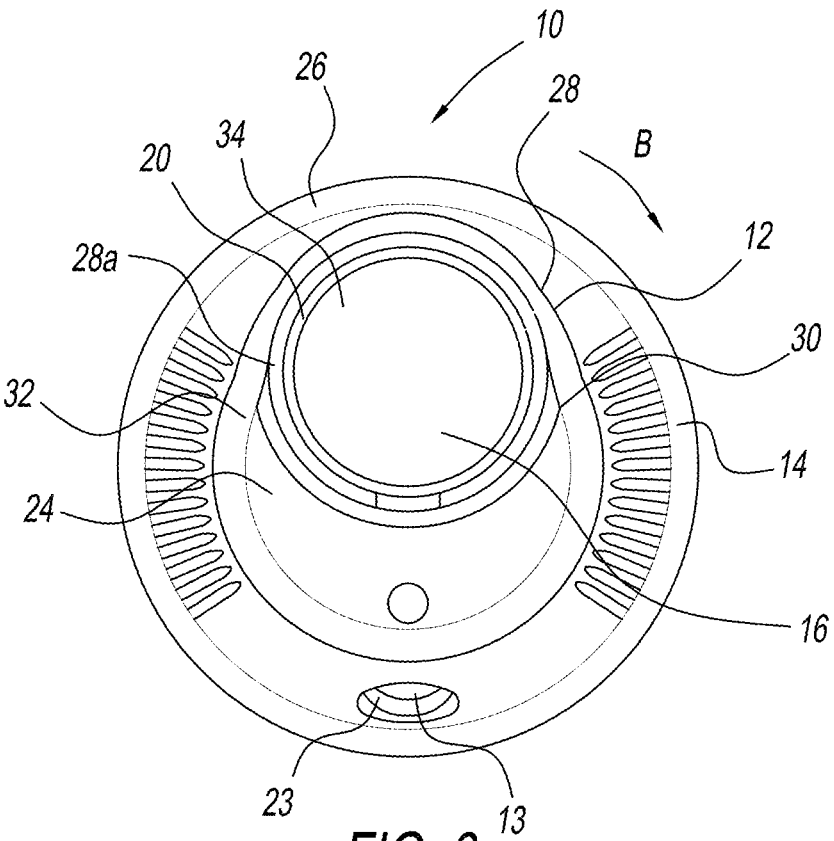
FIG. 5



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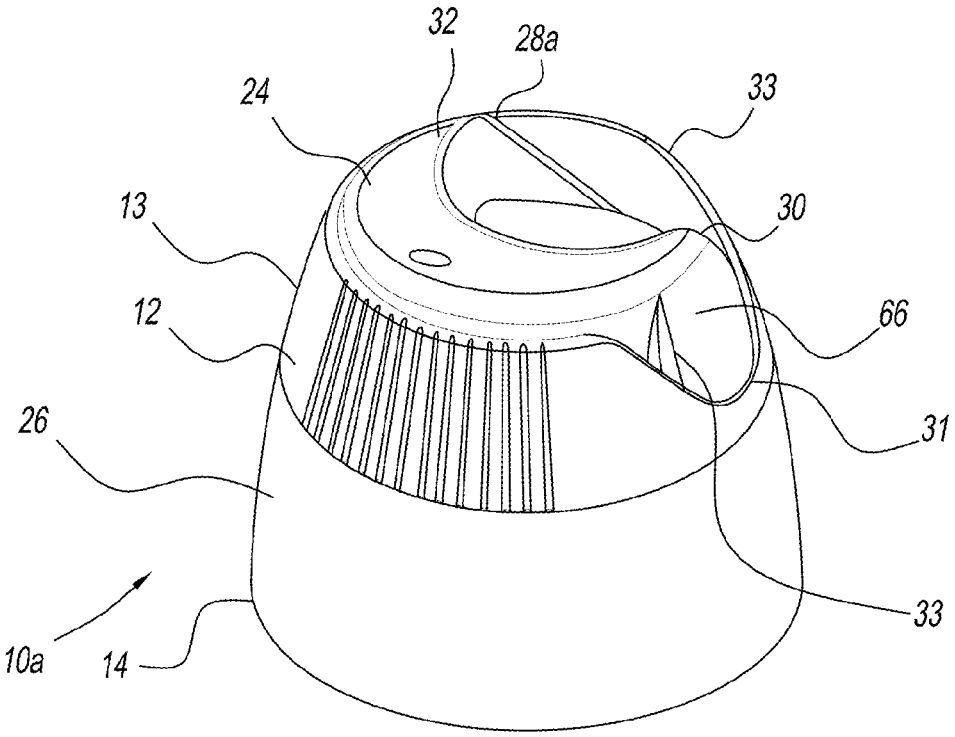
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FIG. 7

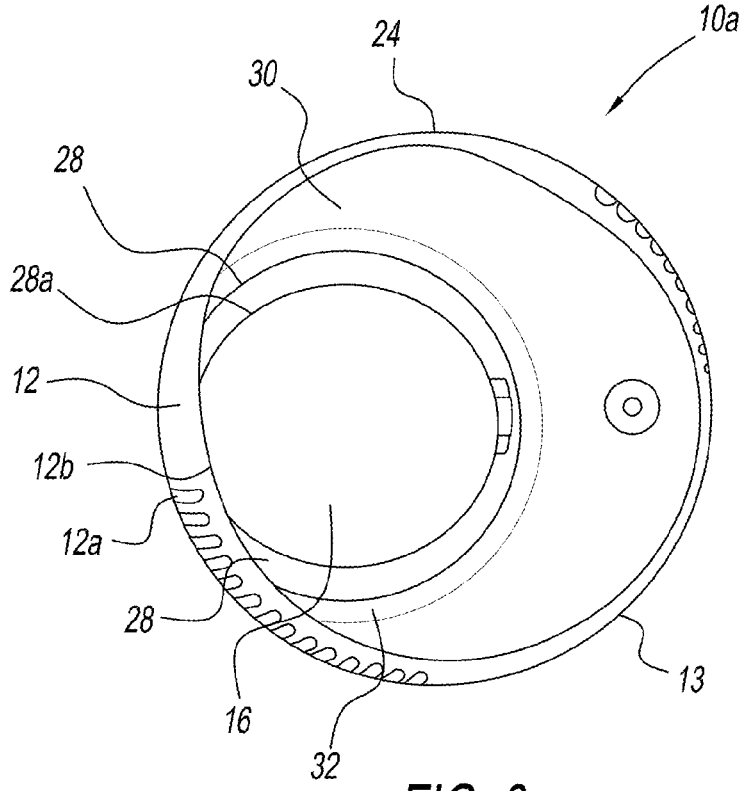
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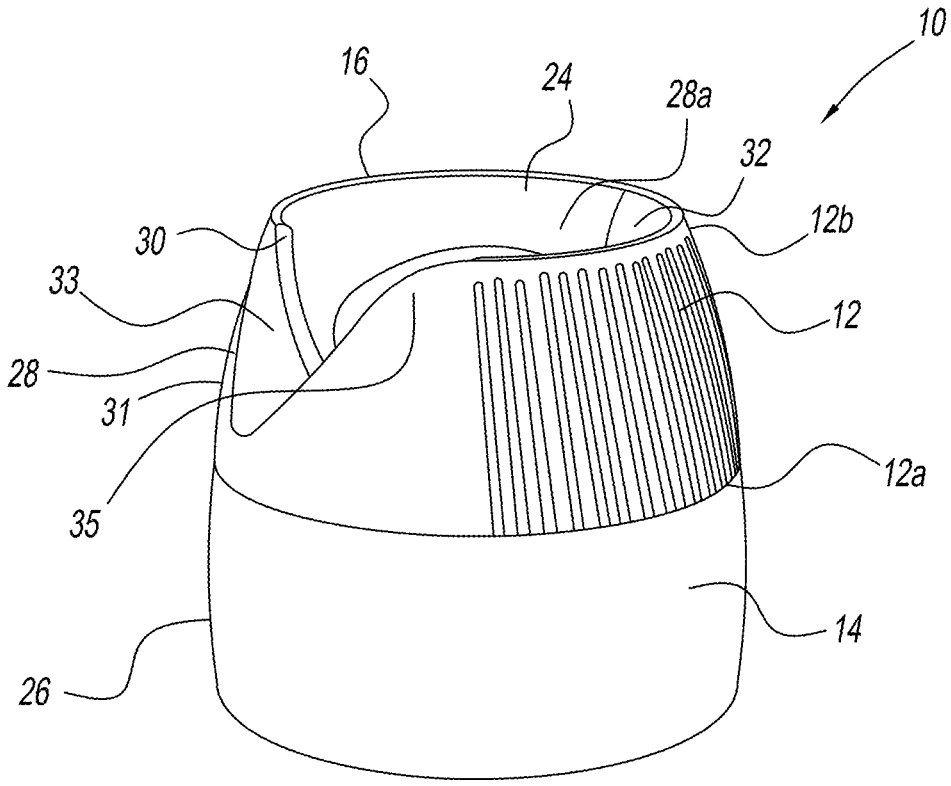
FIG. 8



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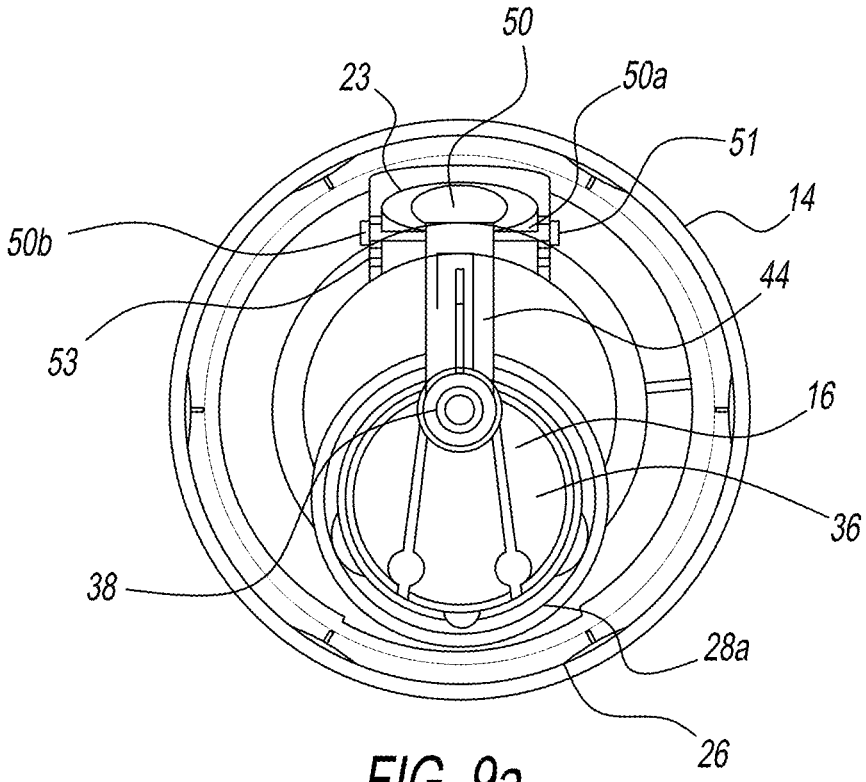

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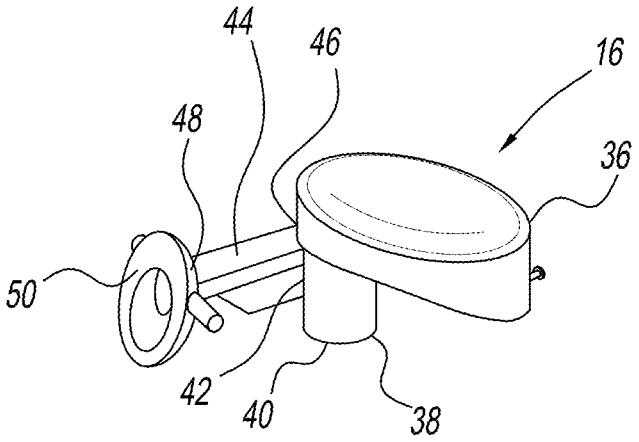

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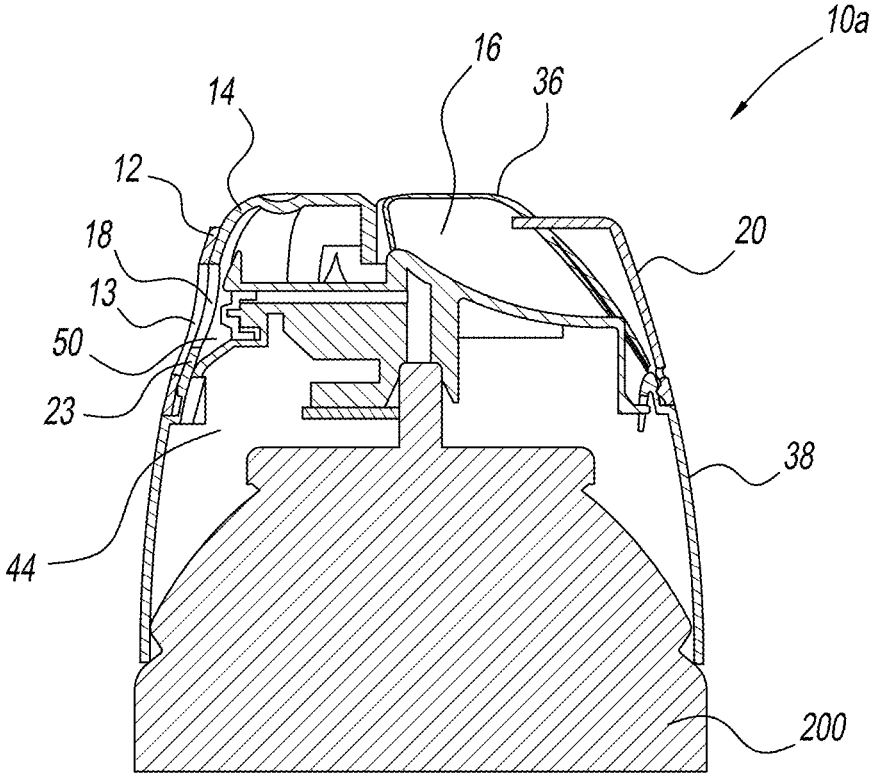

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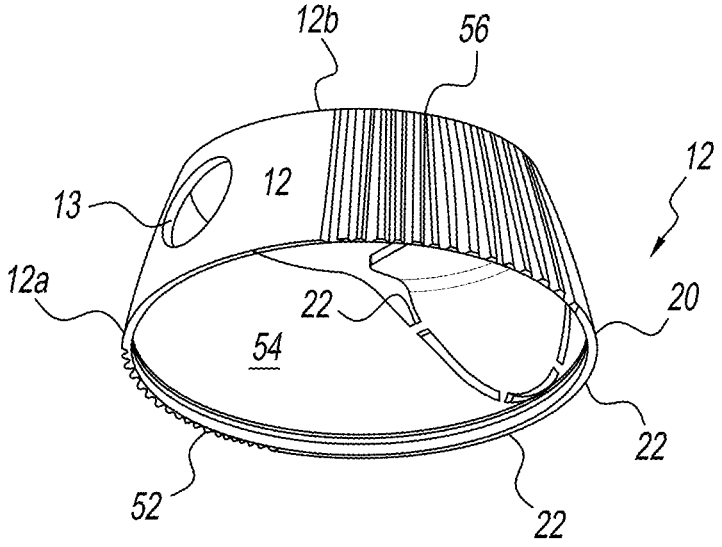

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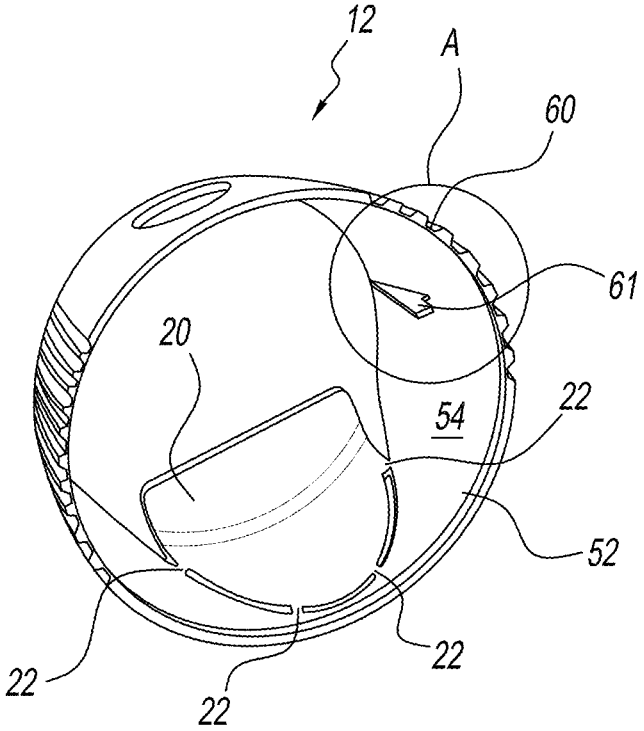

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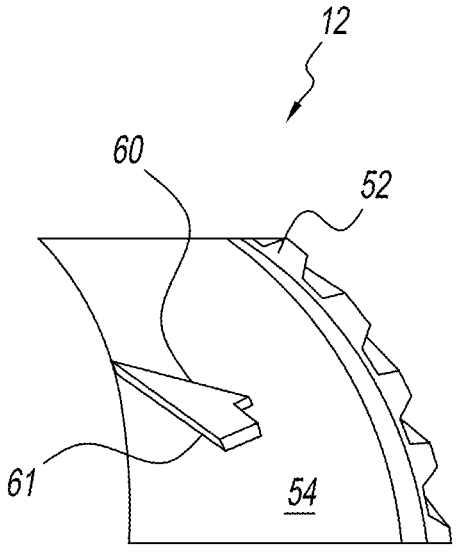

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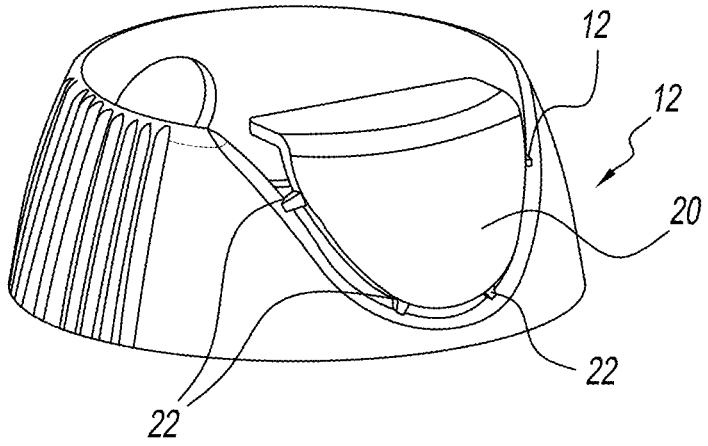
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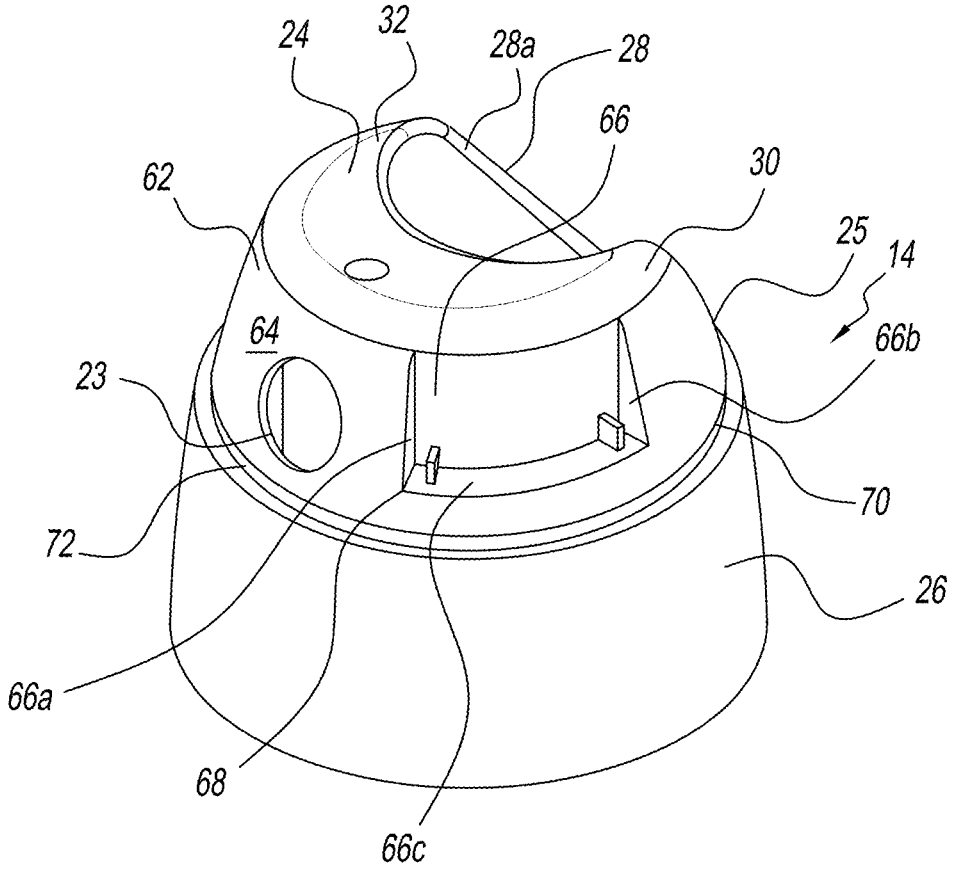
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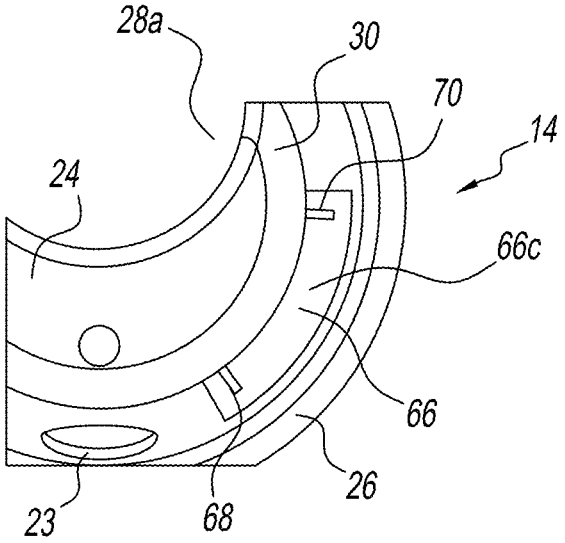
FIG. 15



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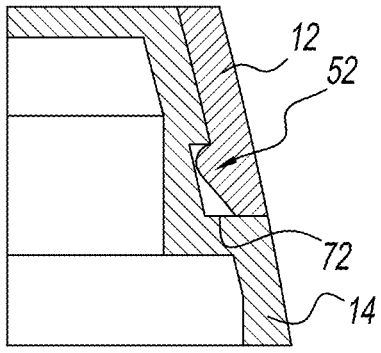

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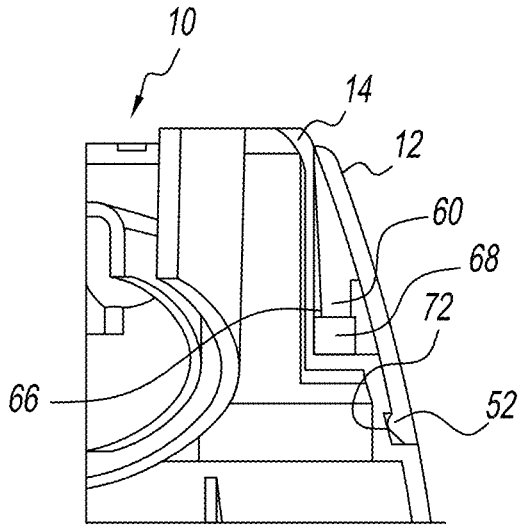

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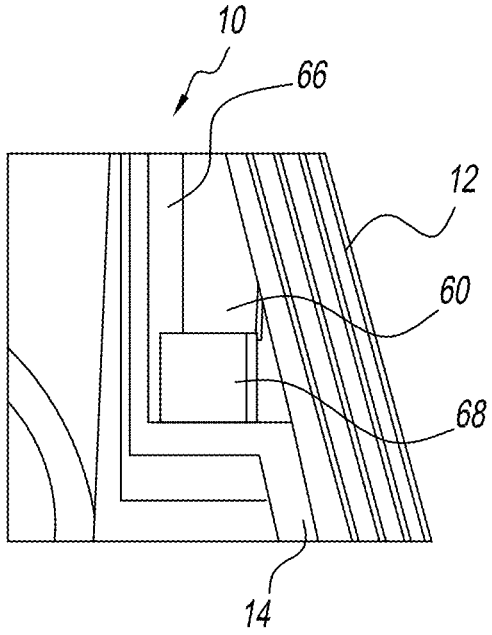

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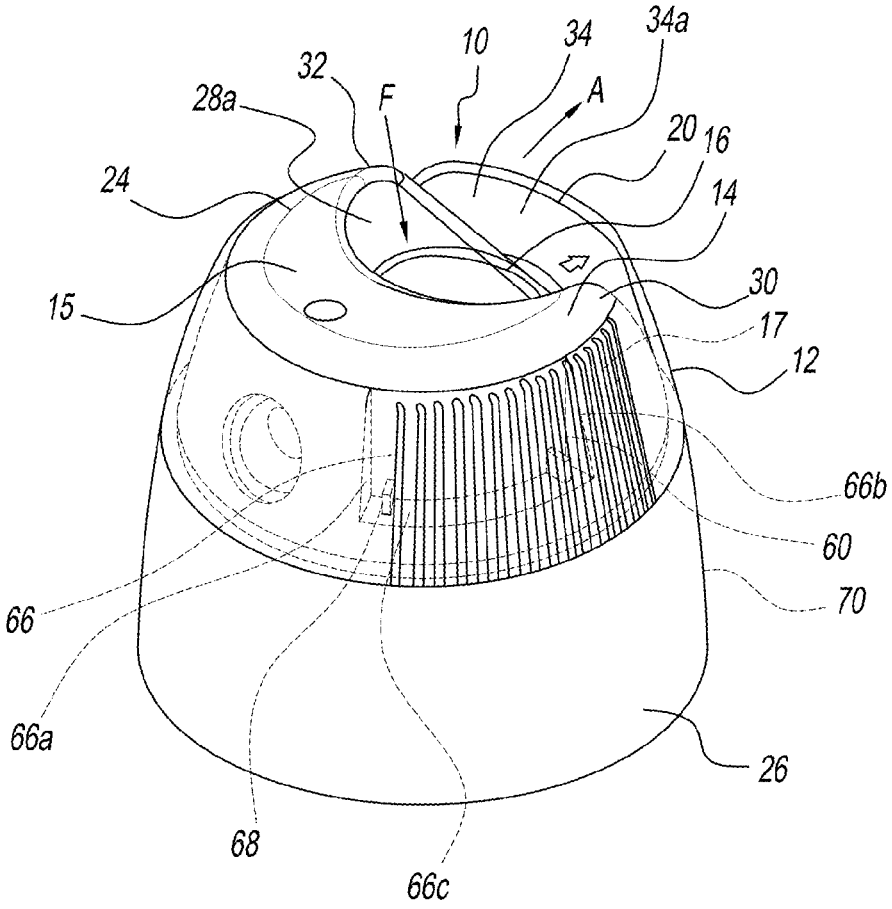
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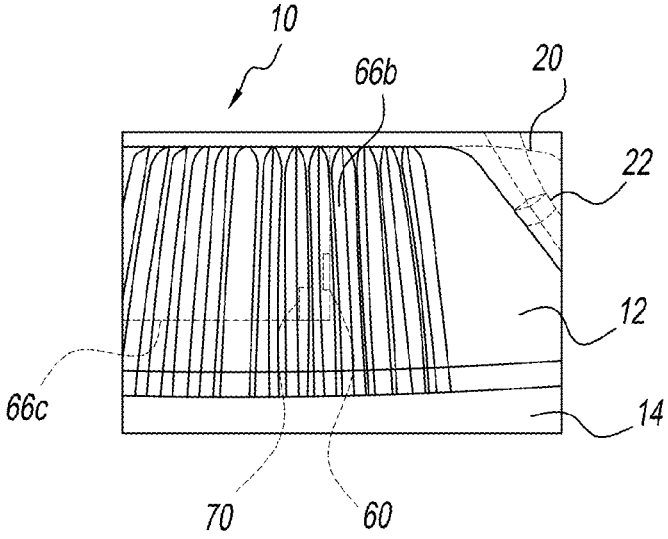
FIG. 20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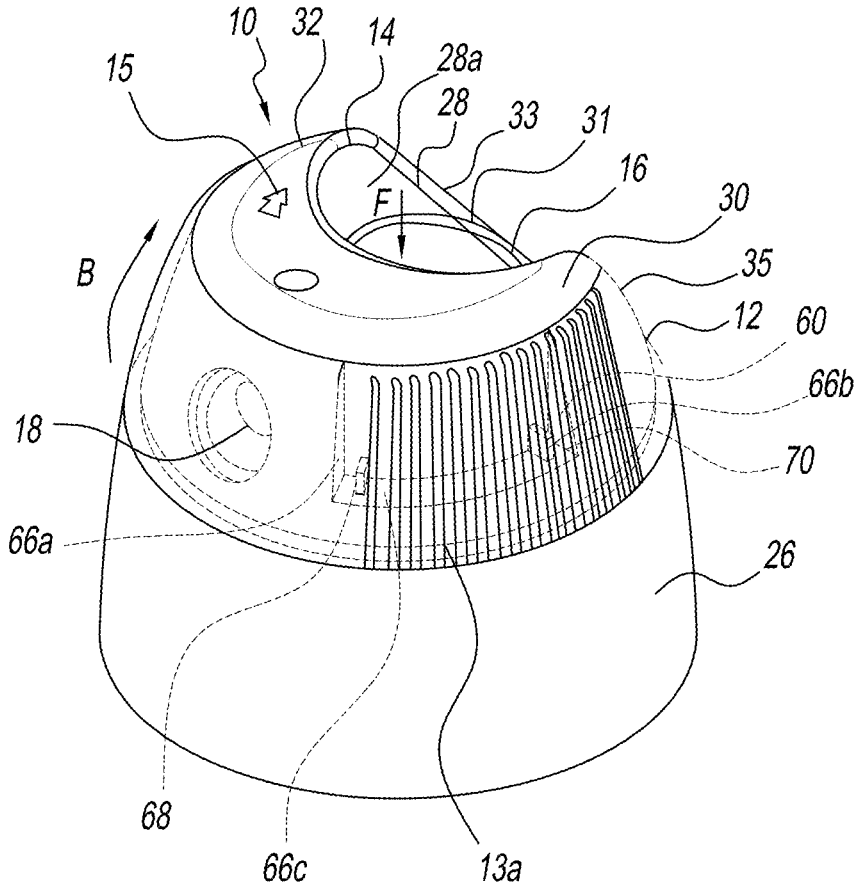

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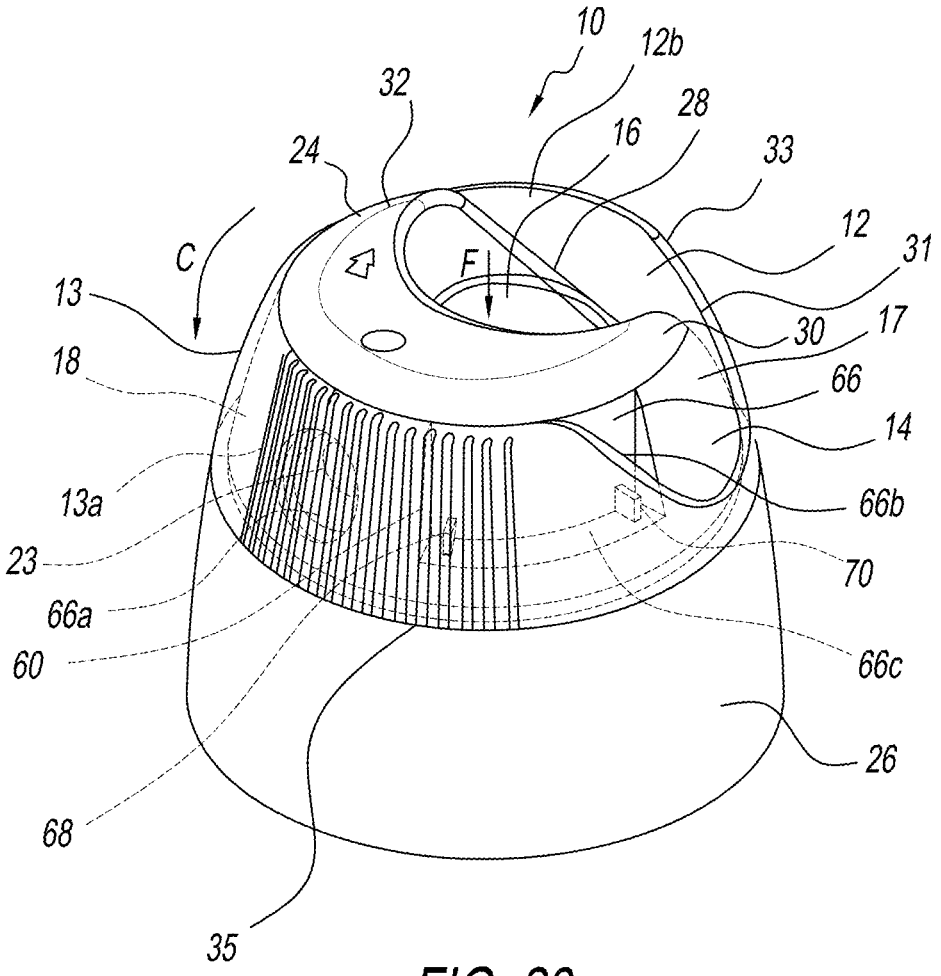
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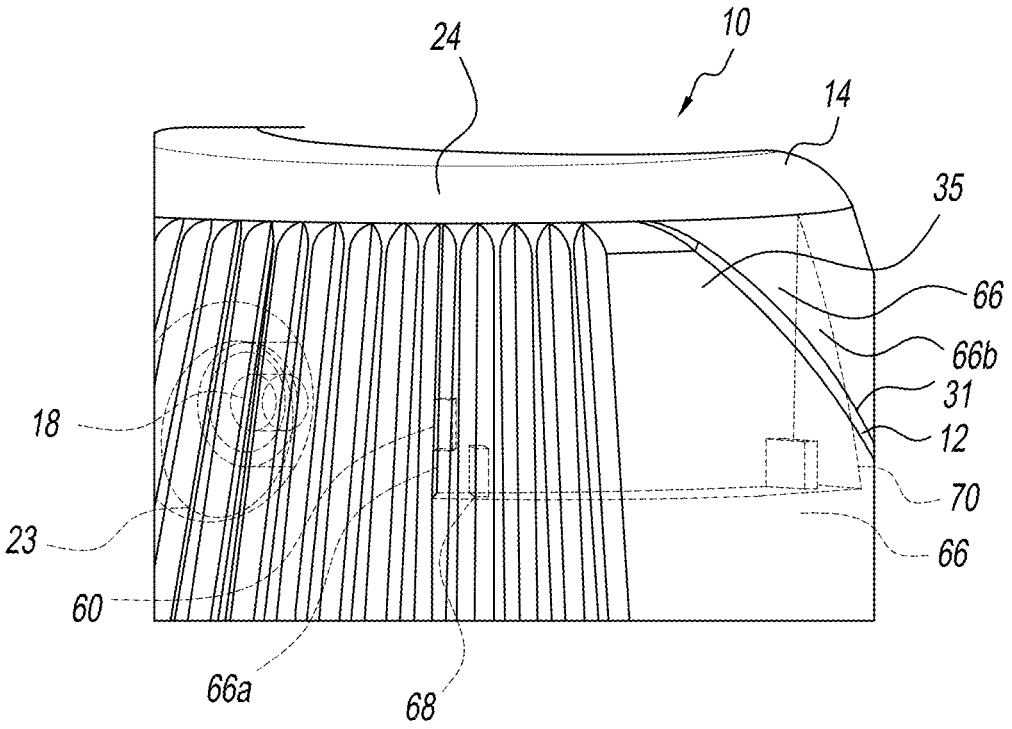
FIG. 23



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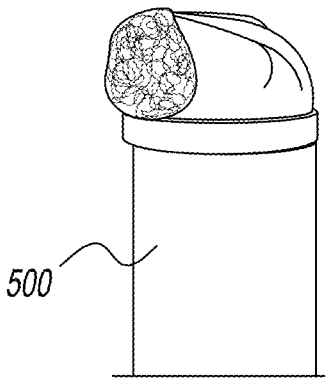

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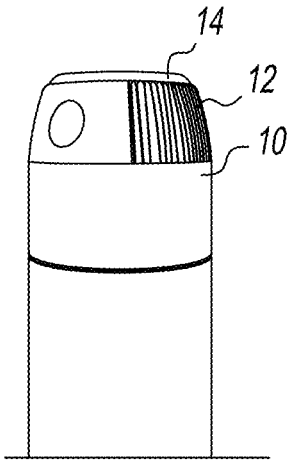

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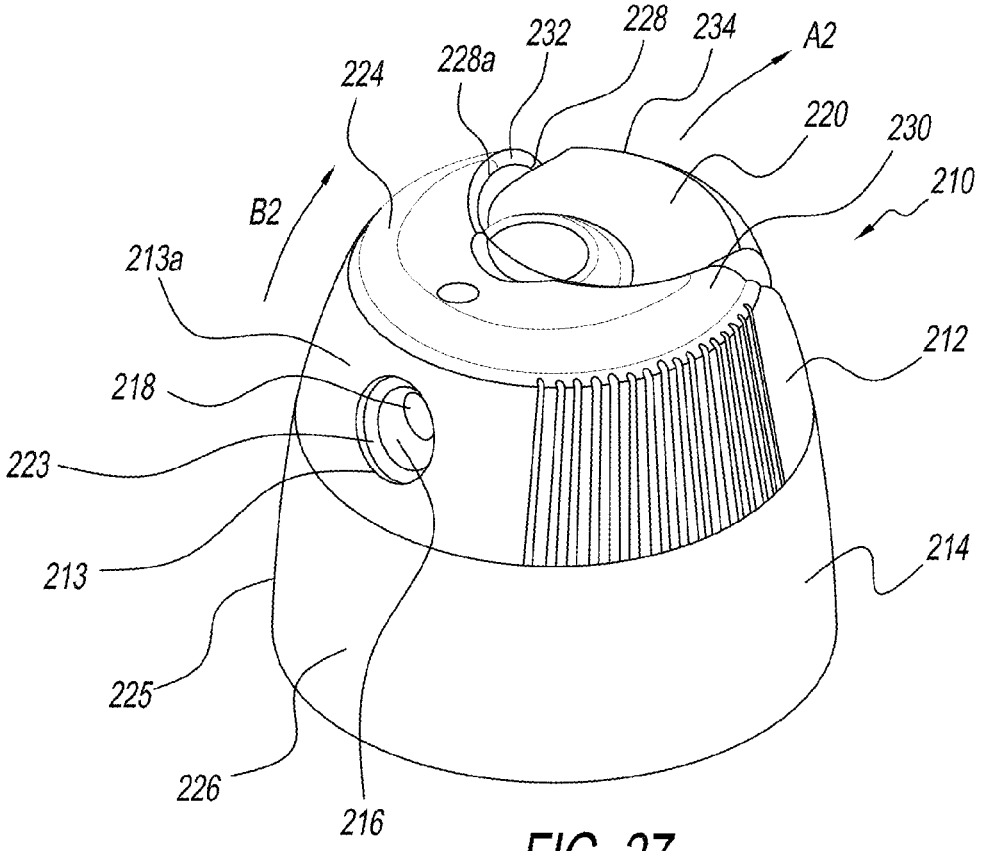
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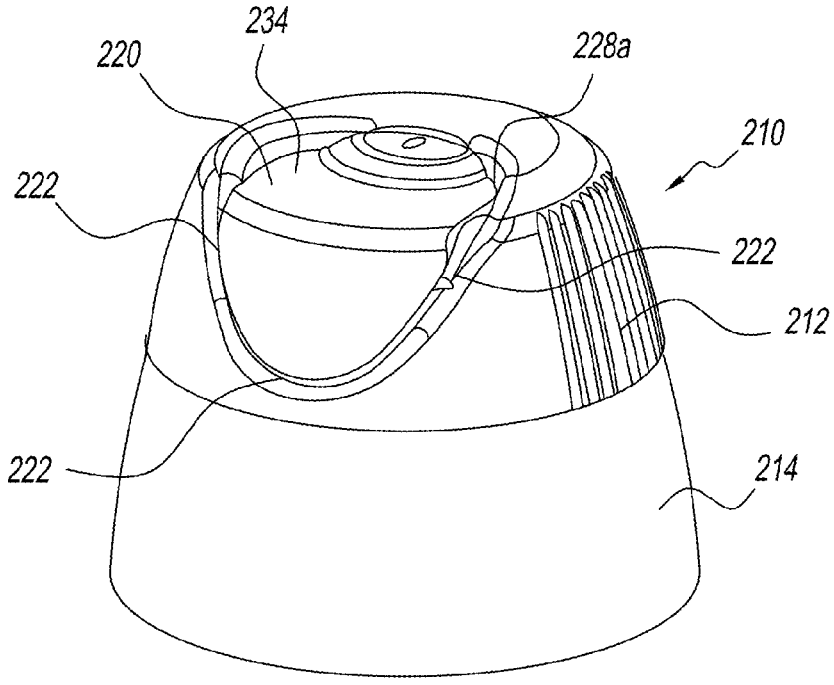
FIG. 27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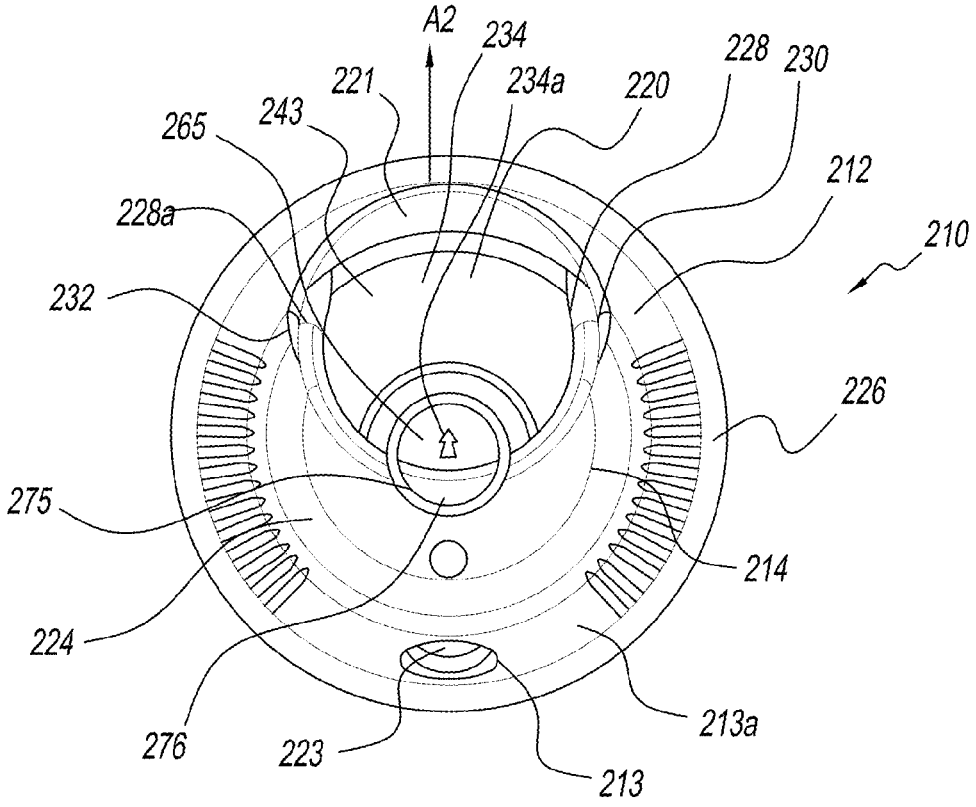
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FIG. 29

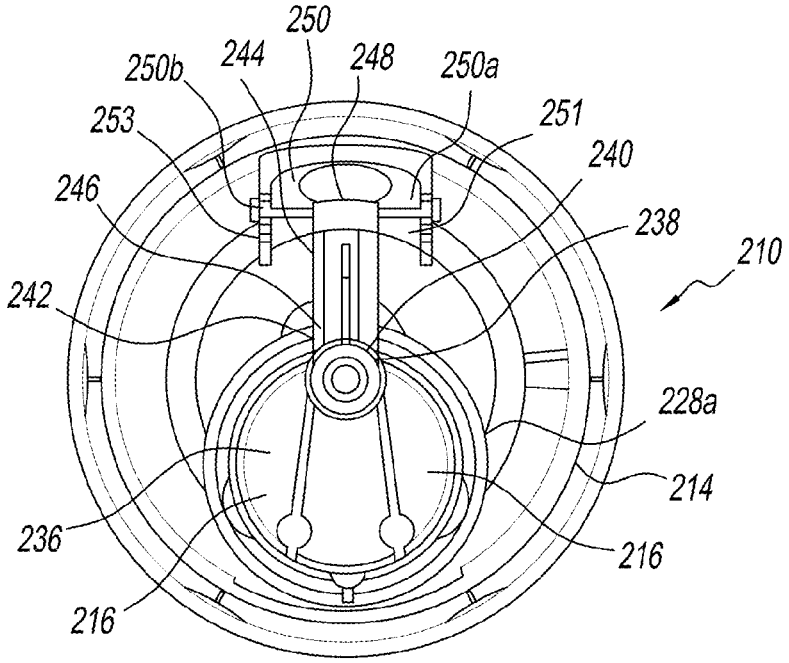
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FIG. 30

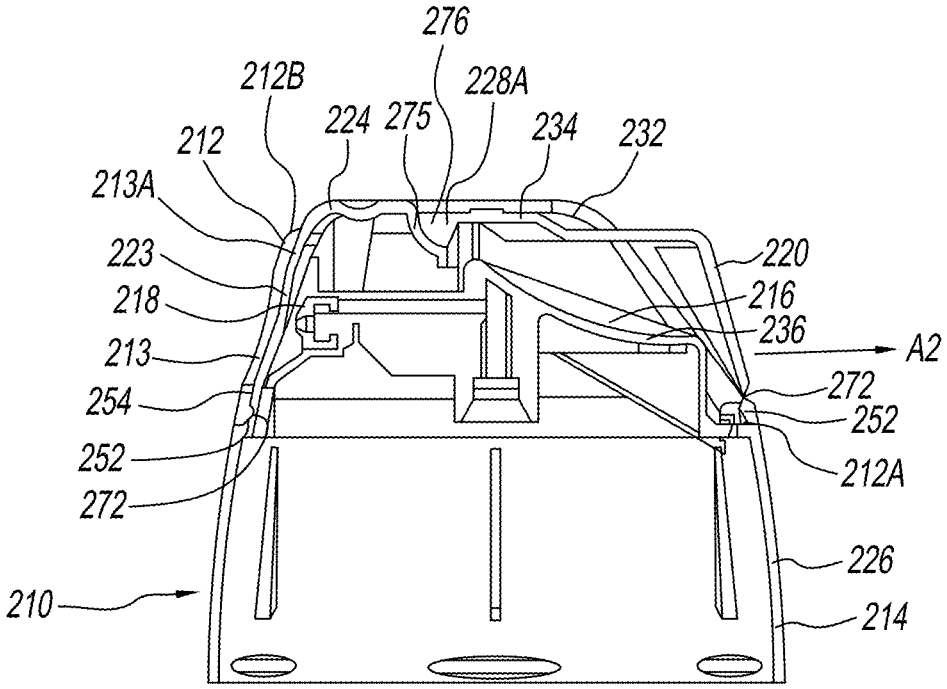
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FIG. 31

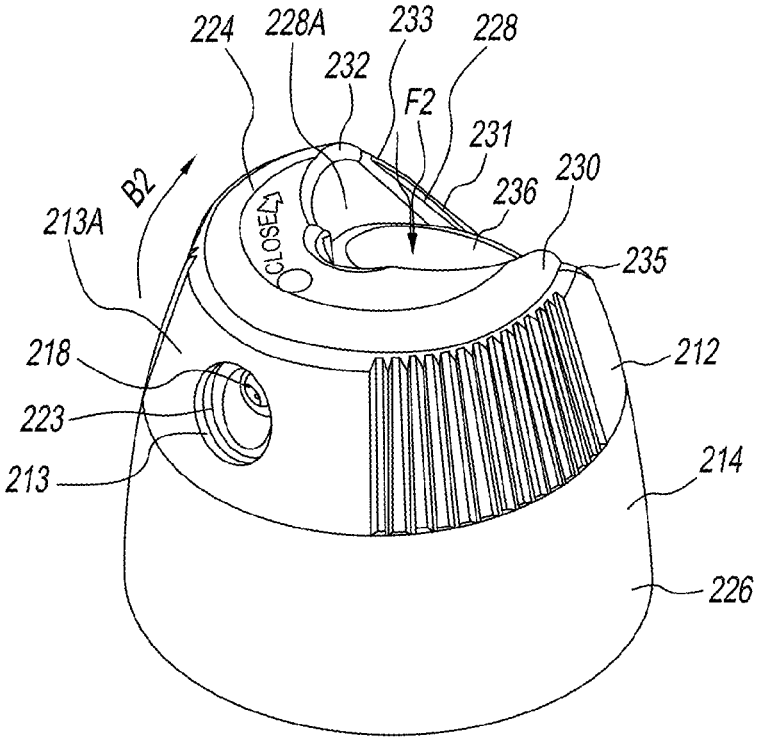
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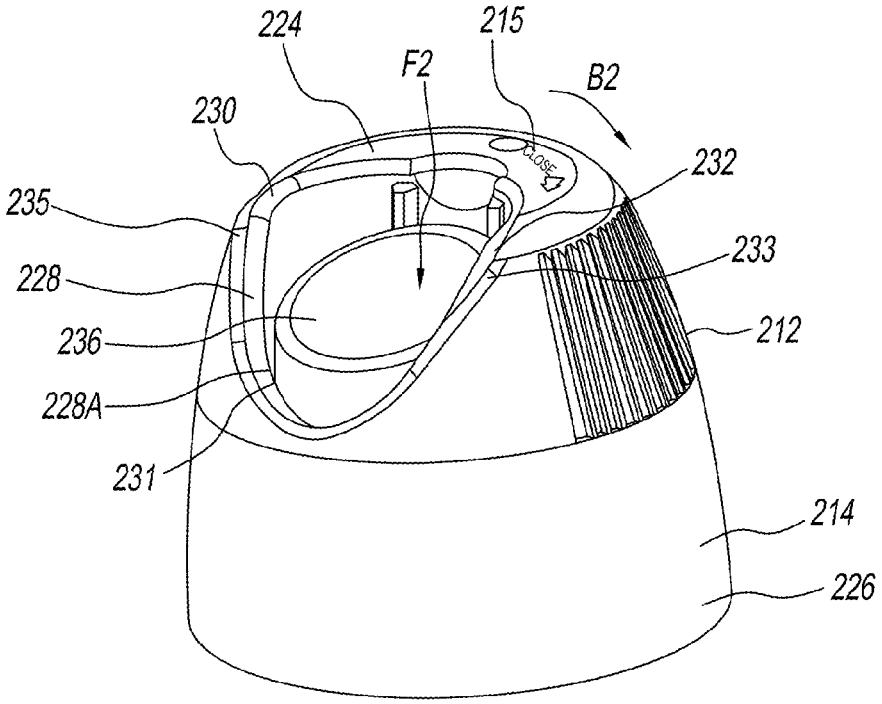
FIG. 32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226

FIG. 33

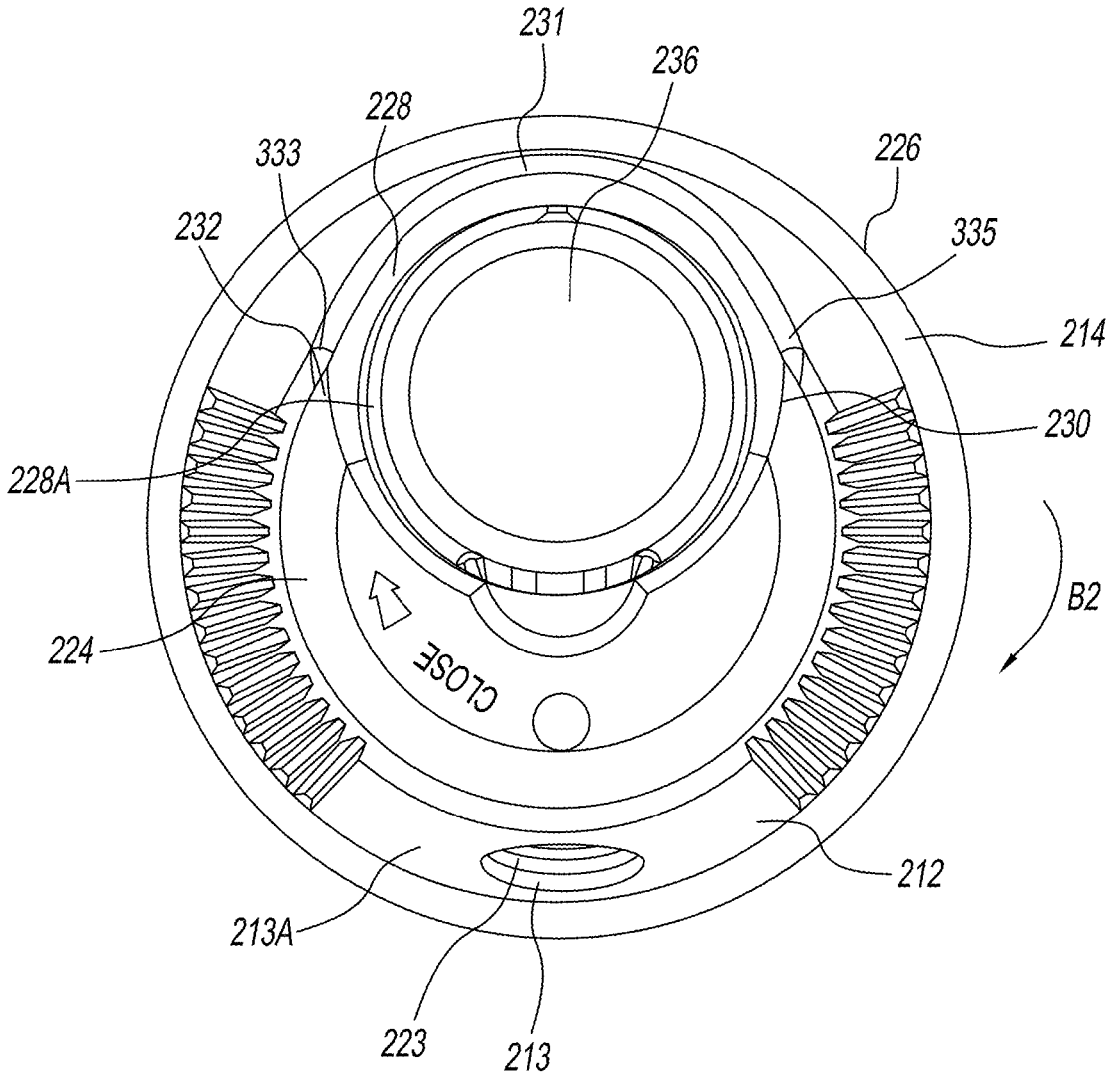
231
236
228
333
226
232
335
214
230
228A
B2
224
CLOSE
212
213A
223
213

FIG. 34

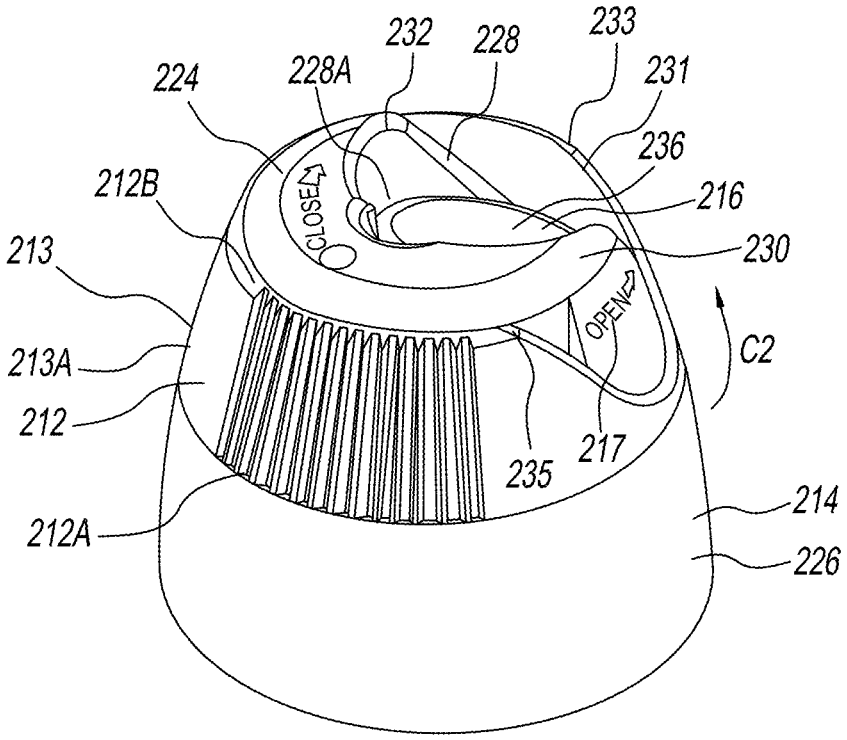
224
228A
232
228
233
231
236
216
230
212B
213
213A
212
212A
235
217
214
226
CLOSED
OPEN
C2

FIG. 35

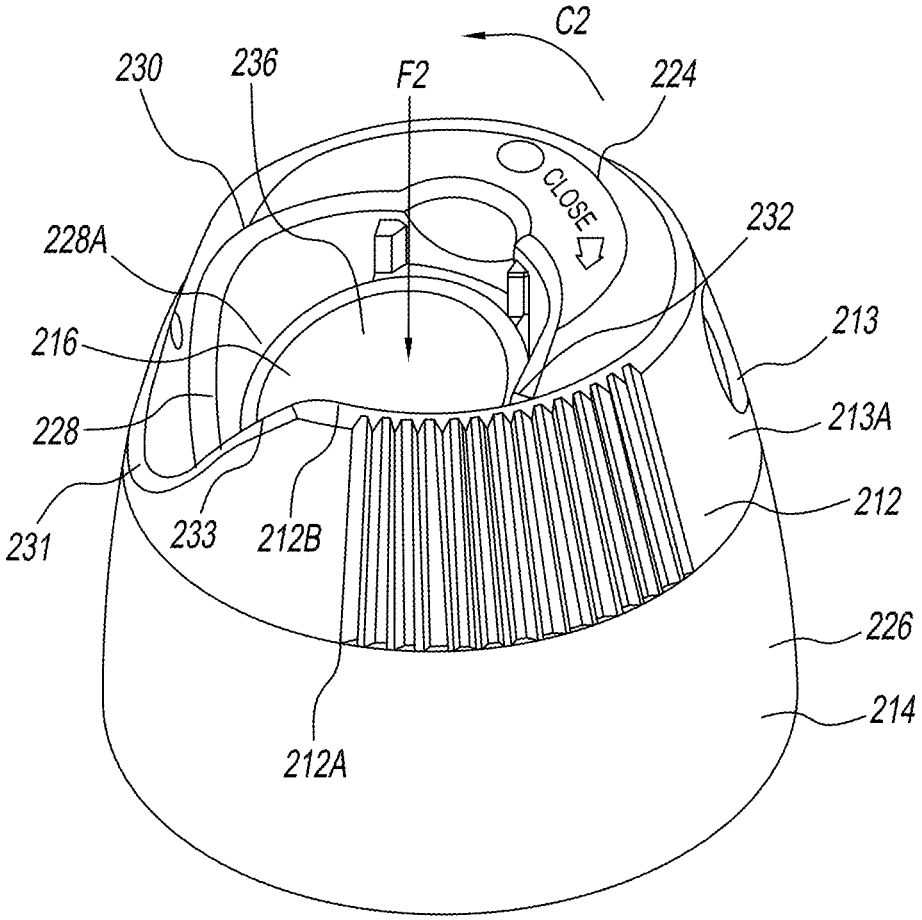
C2
230
236
F2
224
CLOSE
232
228A
213
216
213A
228
212
231
233
212B
226
214
212A

FIG. 36

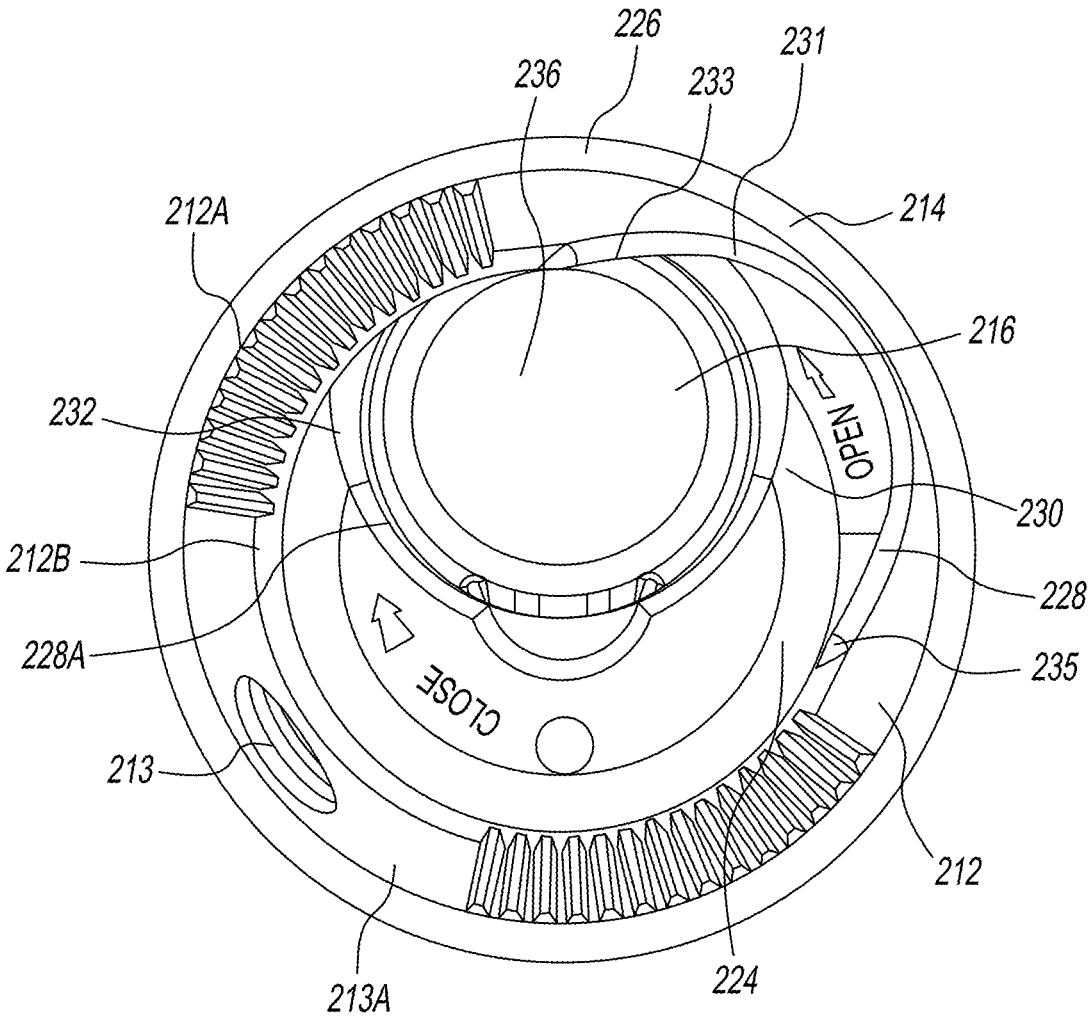
226
231
236
233
212A
214
216
232
OPEN
230
212B
228
228A
CLOSE
235
213
212
213A
224

FIG. 37

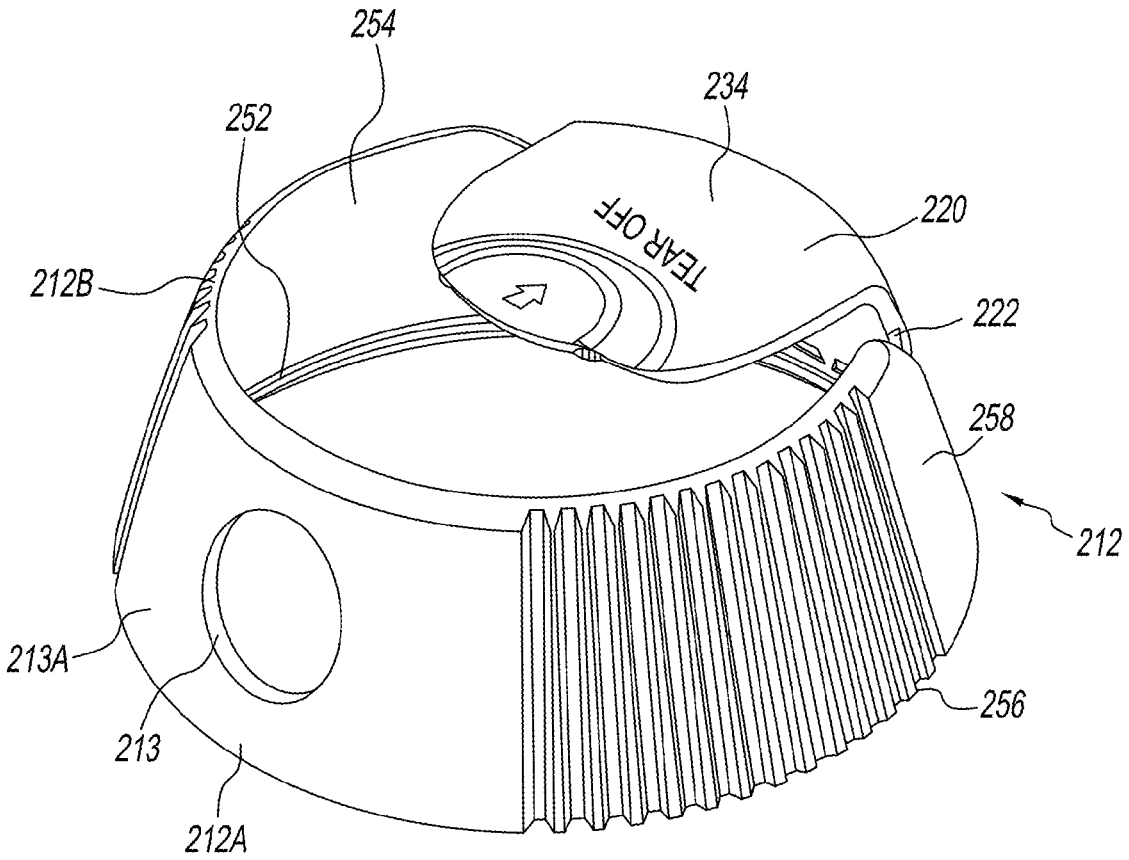

FIG. 38

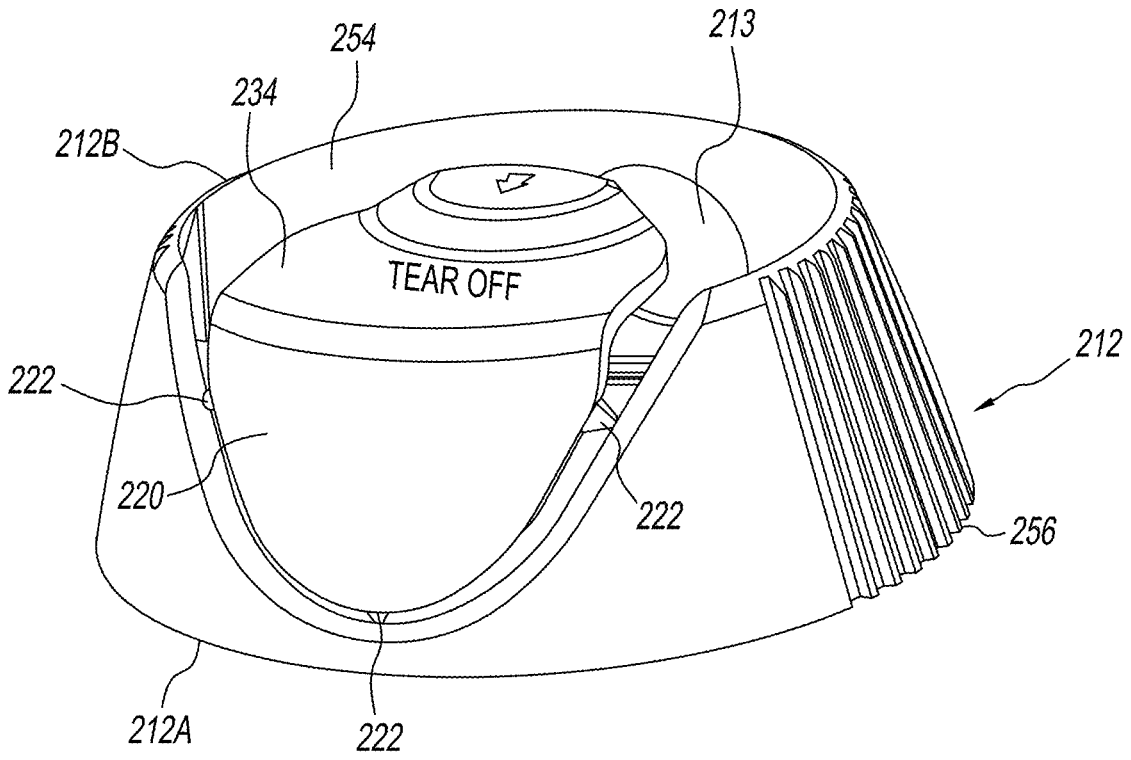

FIG. 39

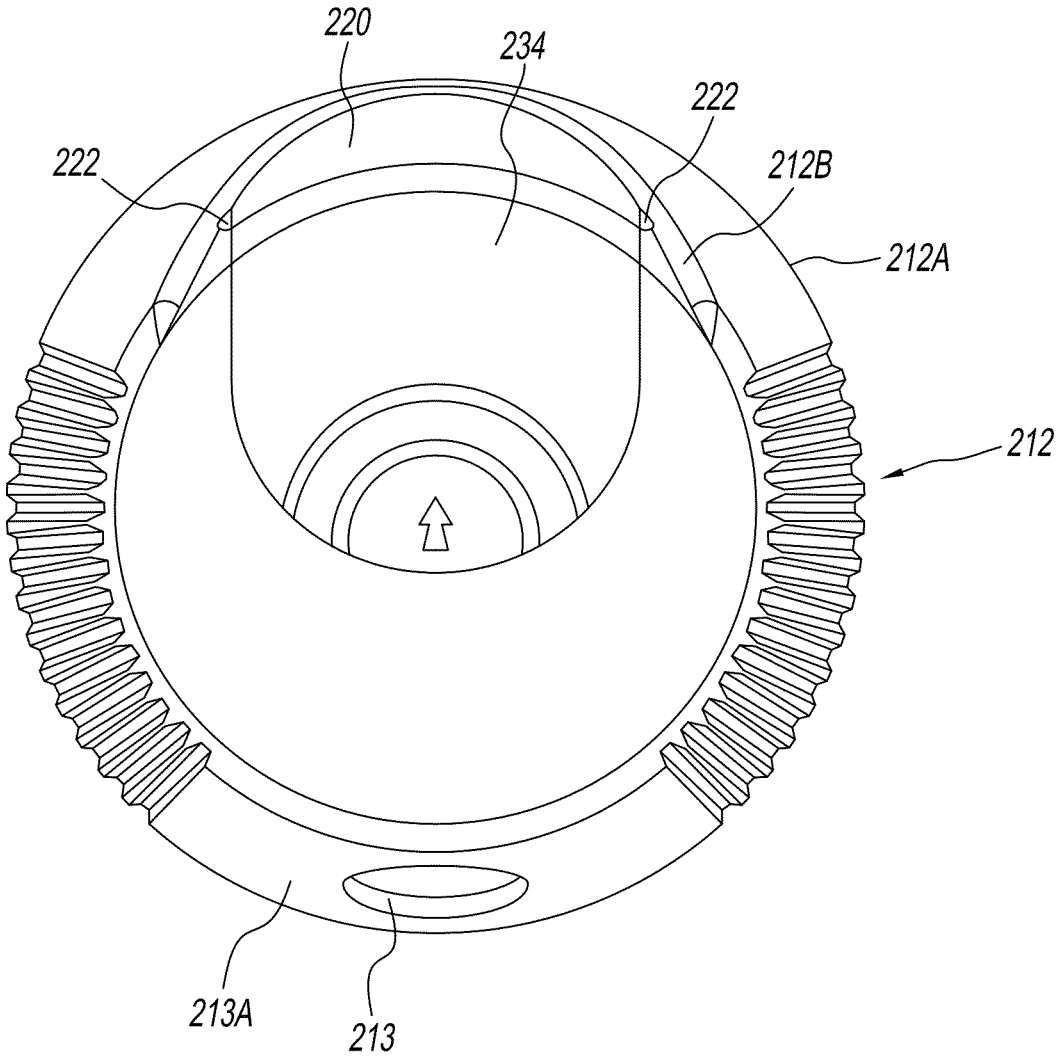

FIG. 40

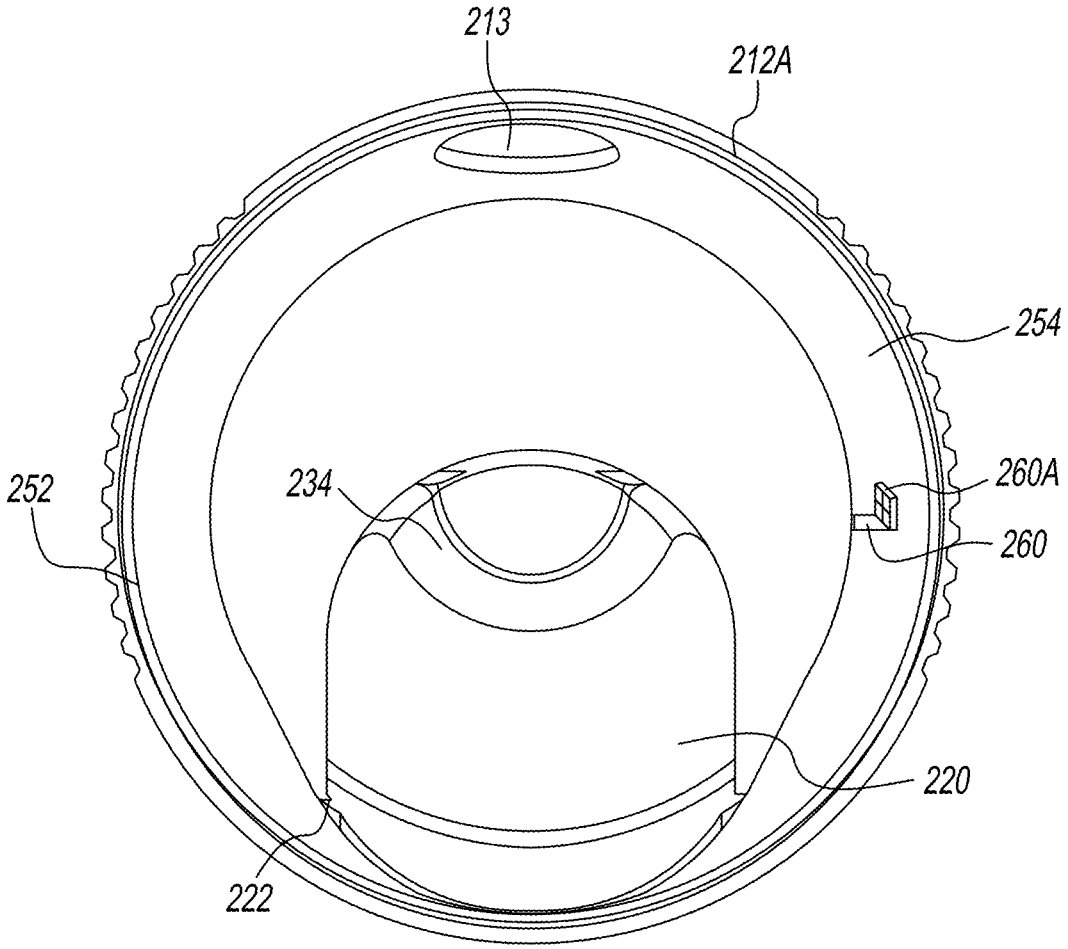

FIG. 41

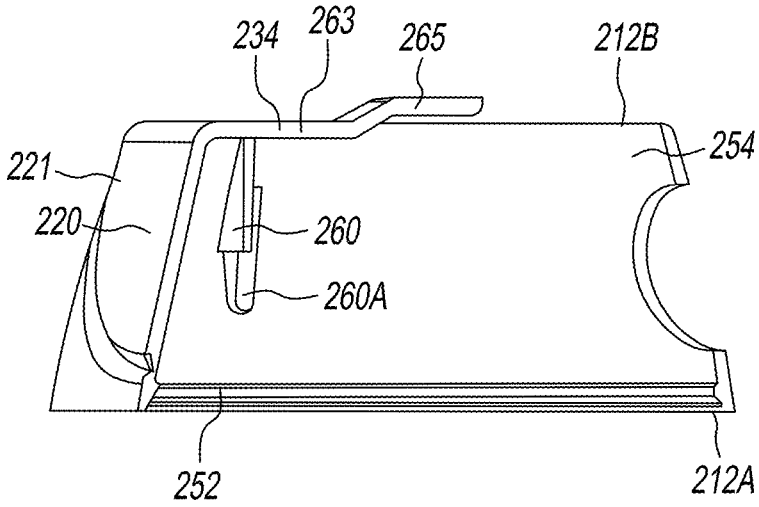
234
263
265
212B
254
221
220
260
260A
252
212A

FIG. 42

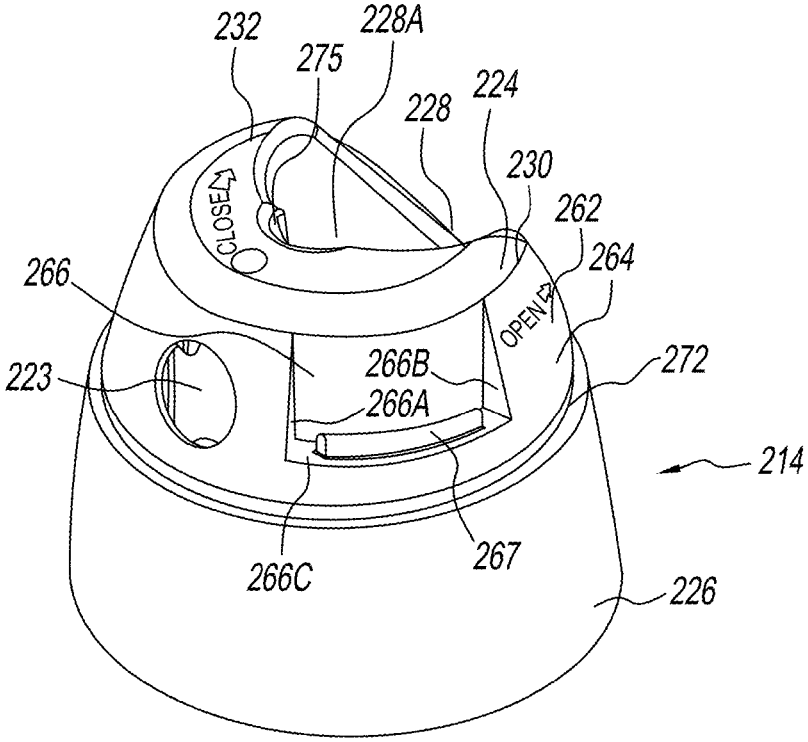
232
275
228A
228
224
230
262
264
266
CLOSED
OPEN
223
266B
266A
272
214
266C
267
226

FIG. 43

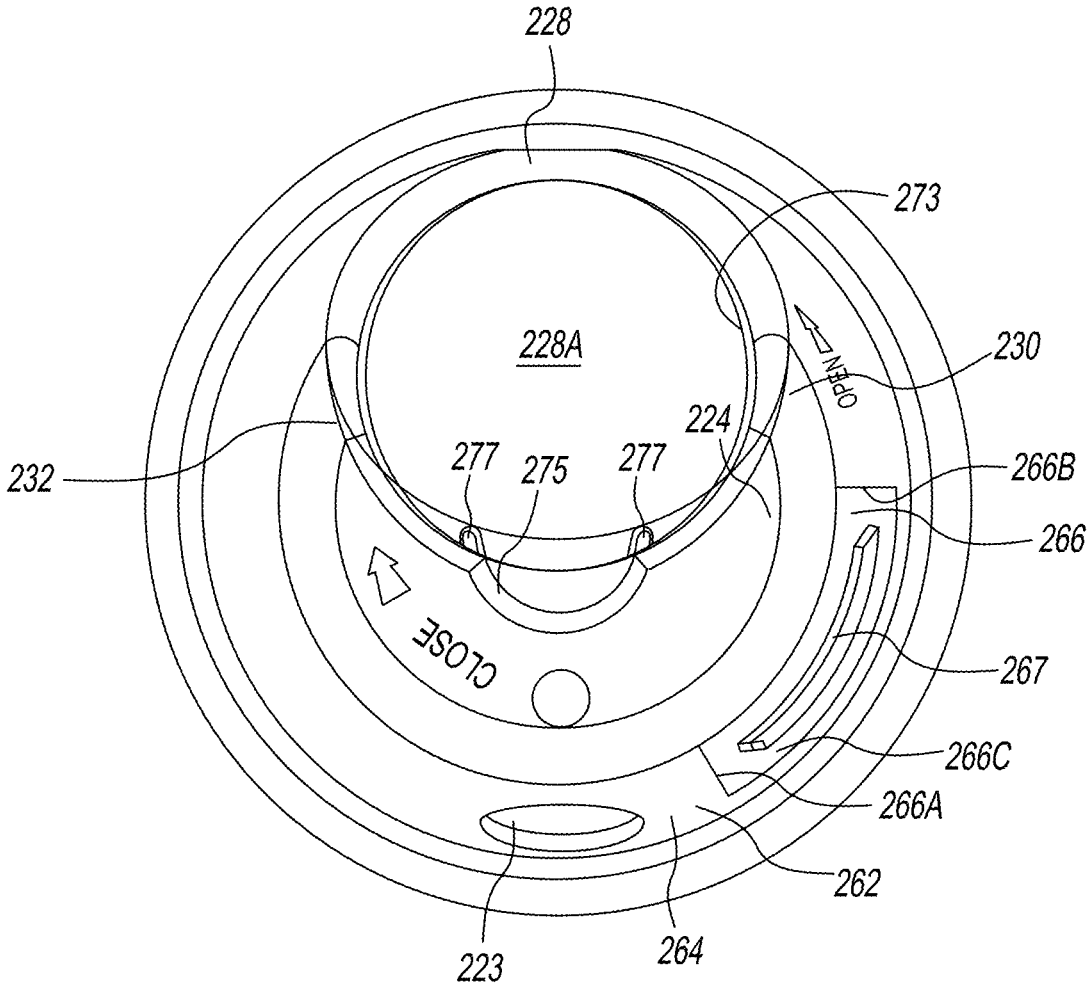
228
273
228A
OPEN
230
224
232
277
275
277
266B
266
CLOSE
267
266C
266A
262
223
264

FIG. 44

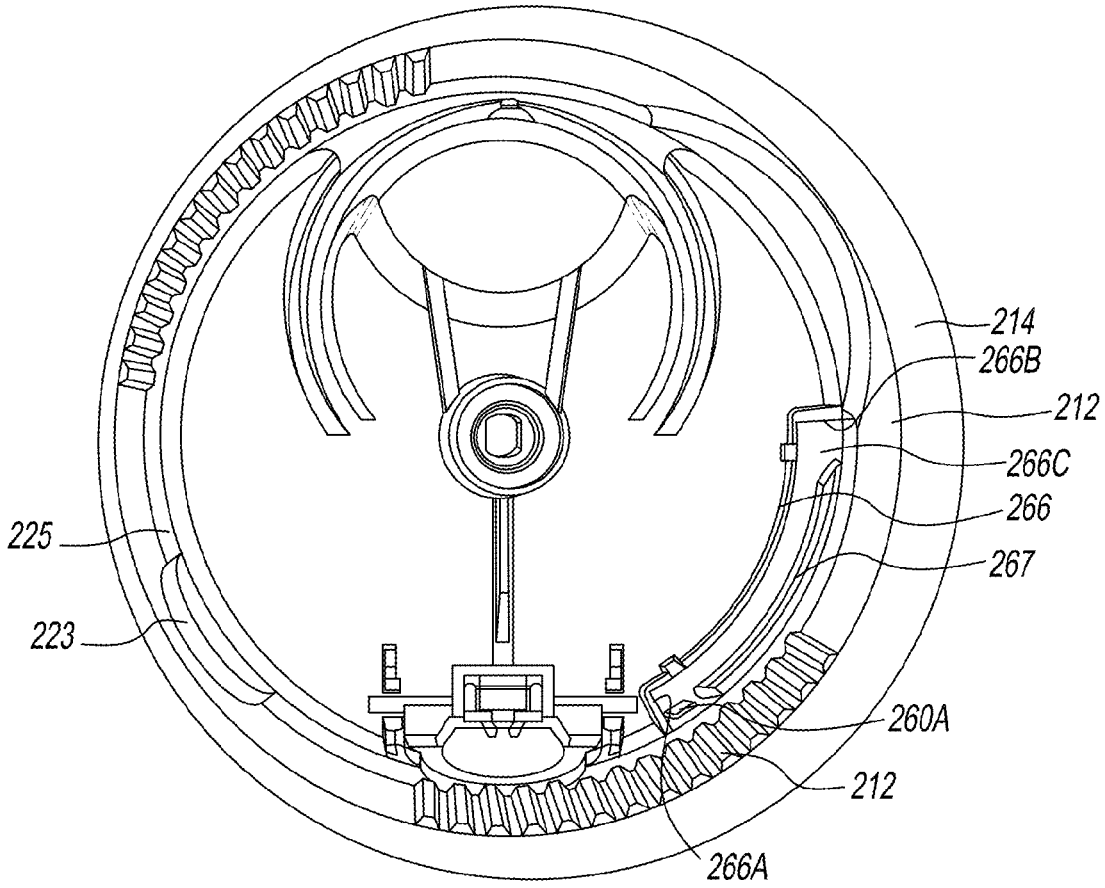

FIG. 45

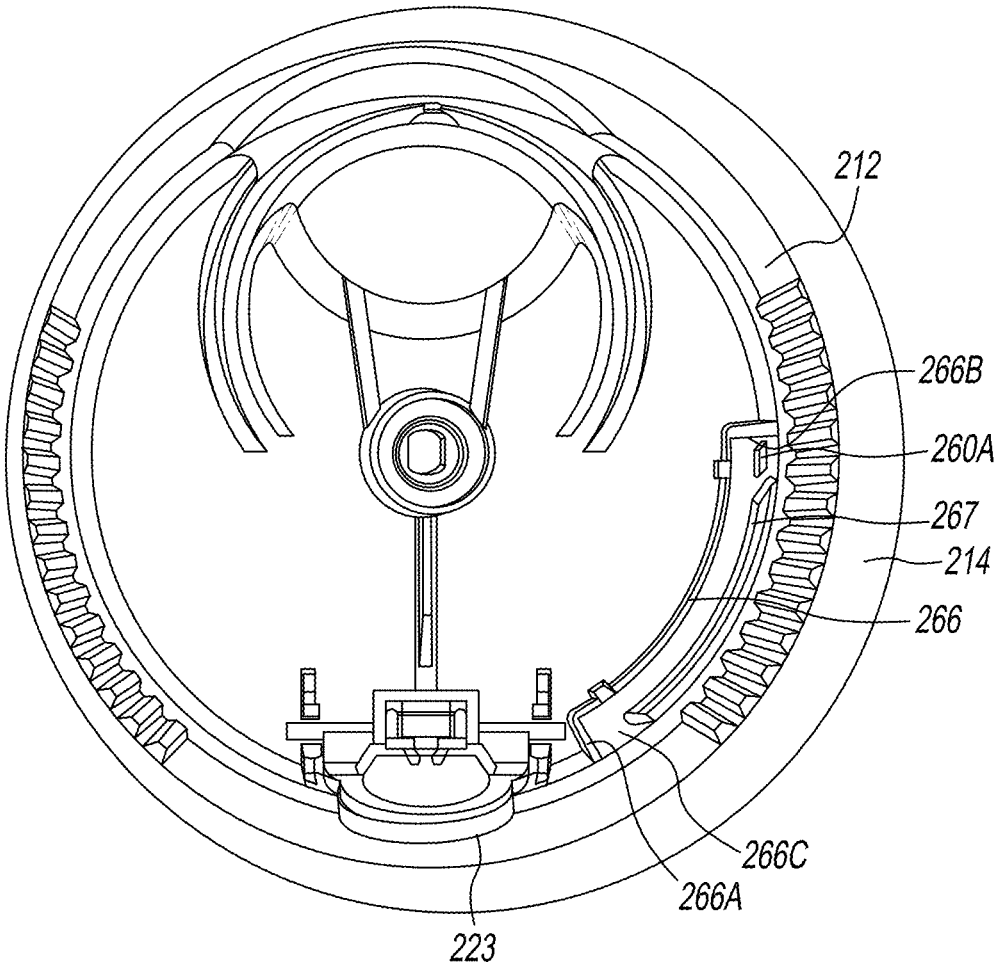

FIG. 46

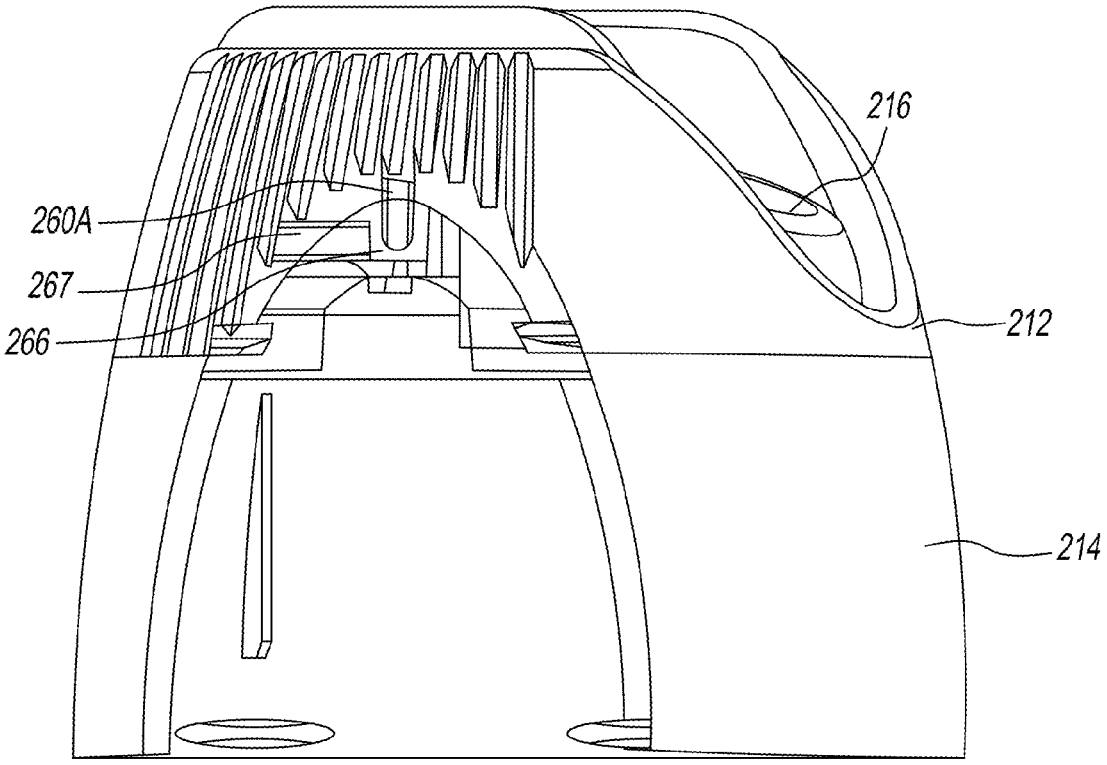

FIG. 47

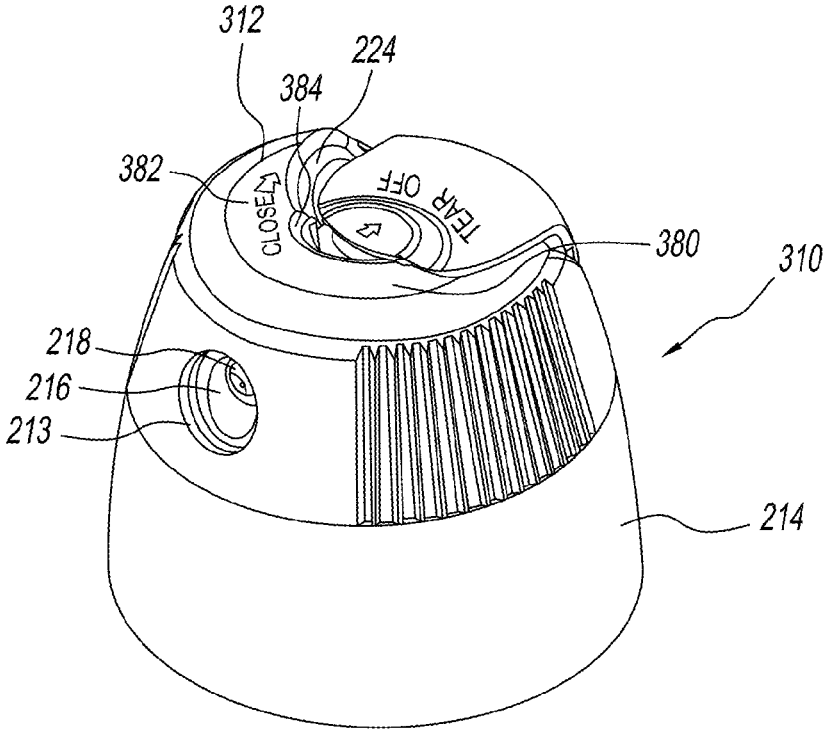
312
224
384
382
CLOSE
TEAR OFF
380
310
218
216
213
214

FIG. 48

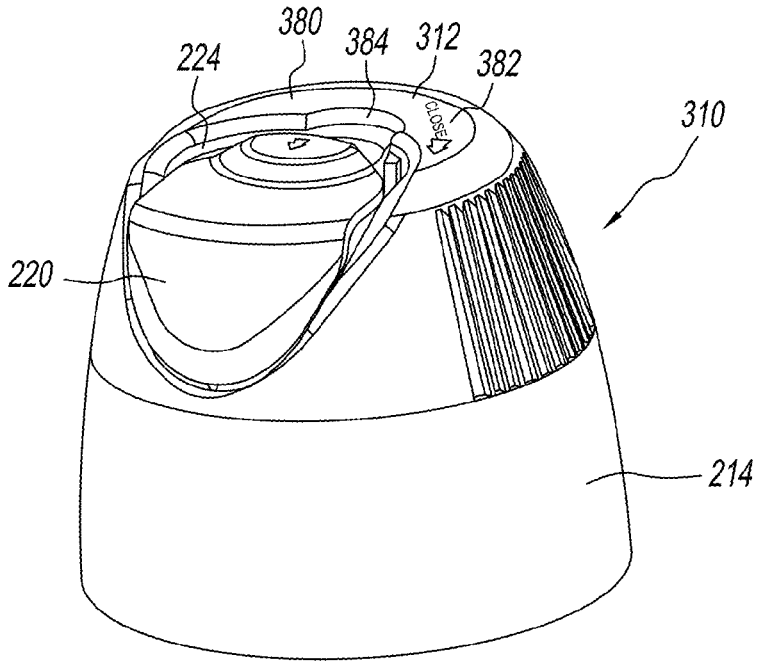
380
384
312
224
382
CLOSE
310
220
214

FIG. 49

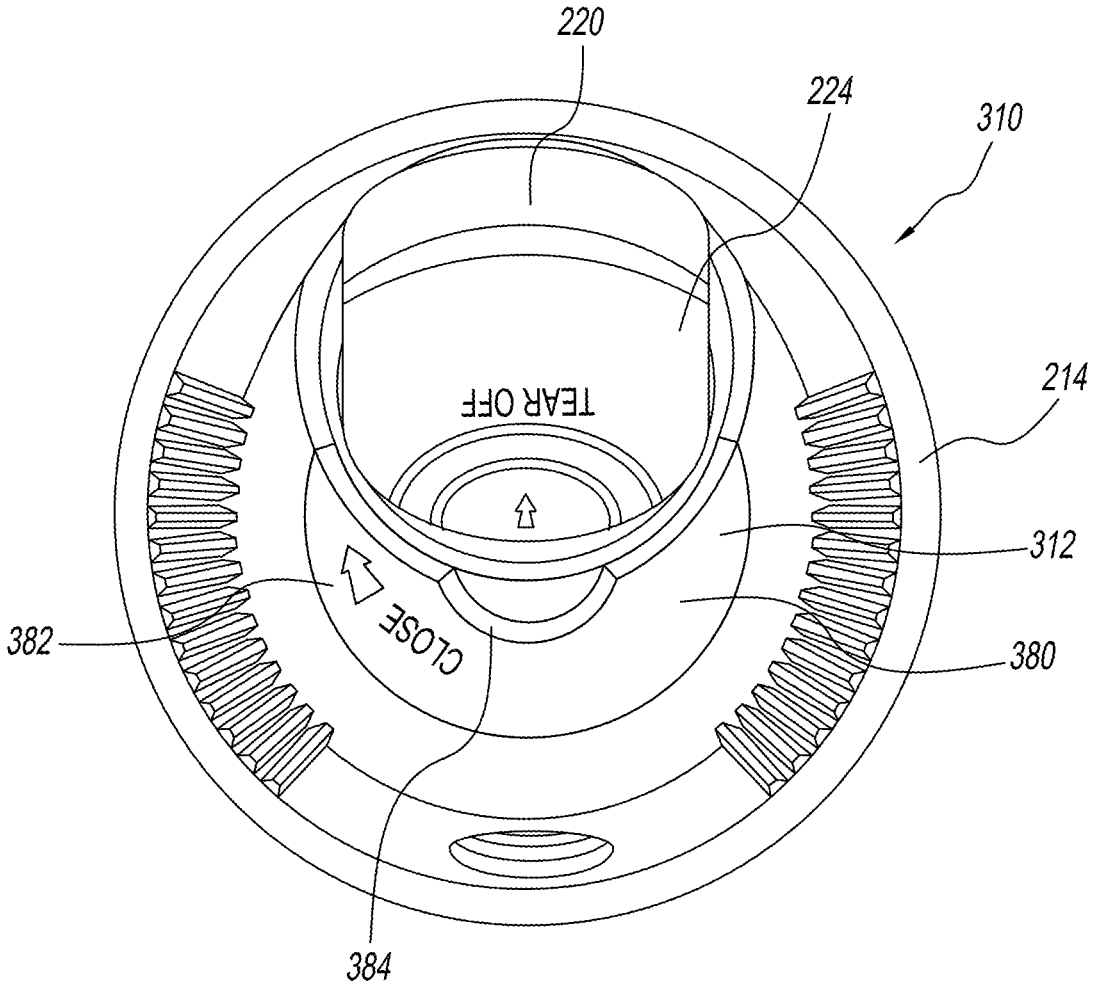

FIG. 50

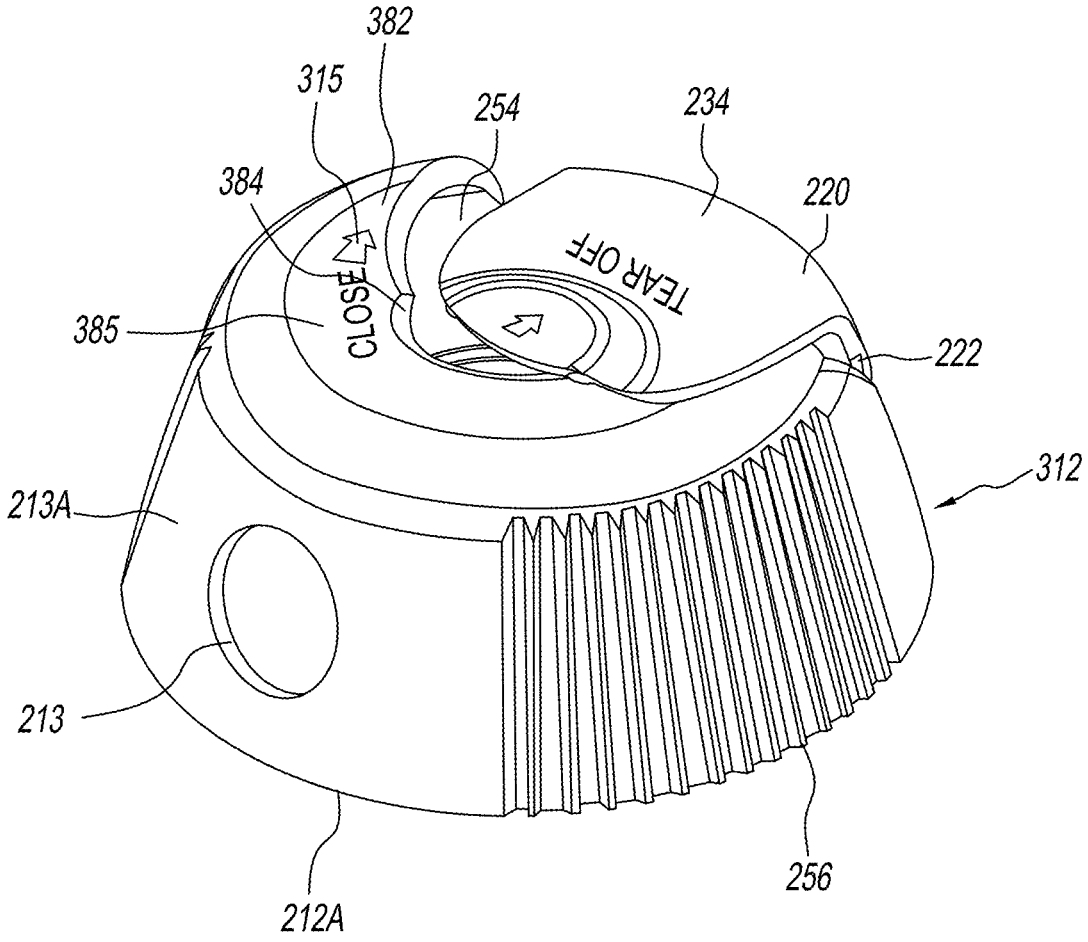
382
315
254
234
384
220
TEAR OFF
CLOSE
385
222
312
213A
213
212A
256

FIG. 51

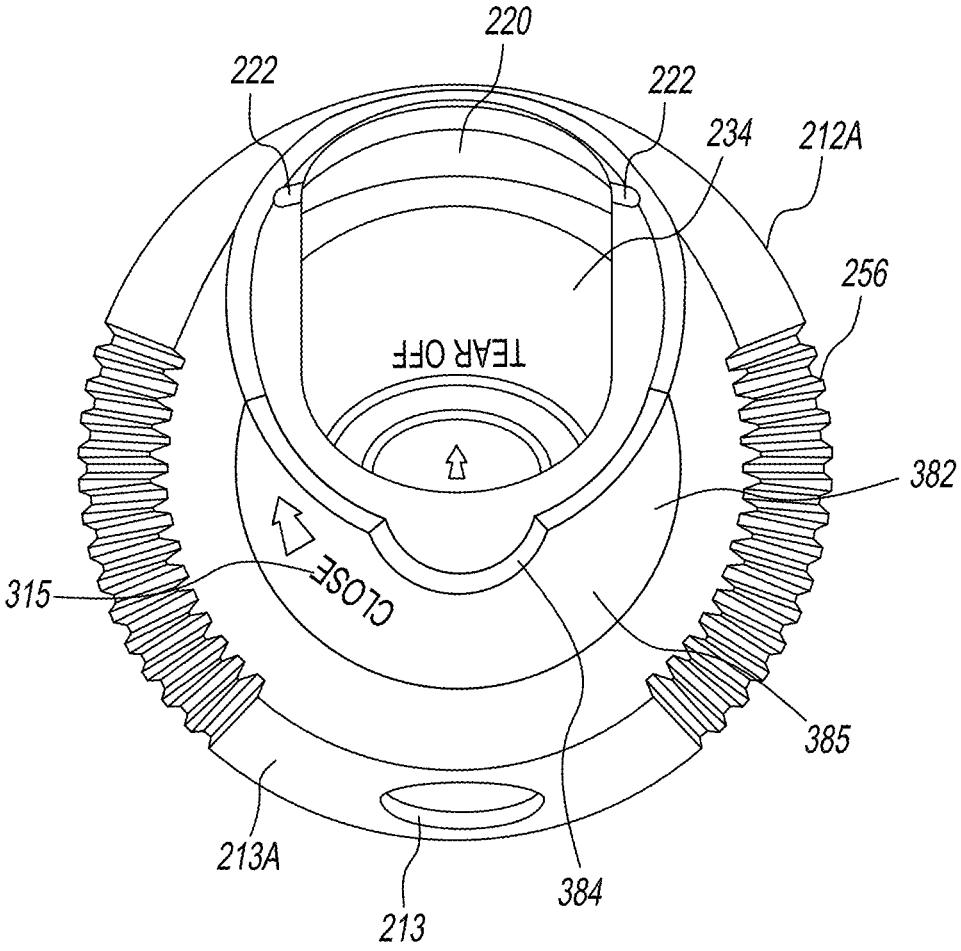
220
222
222
234
212A
256
TEAR OFF
382
CLOSE
315
385
213A
213
384

FIG. 52

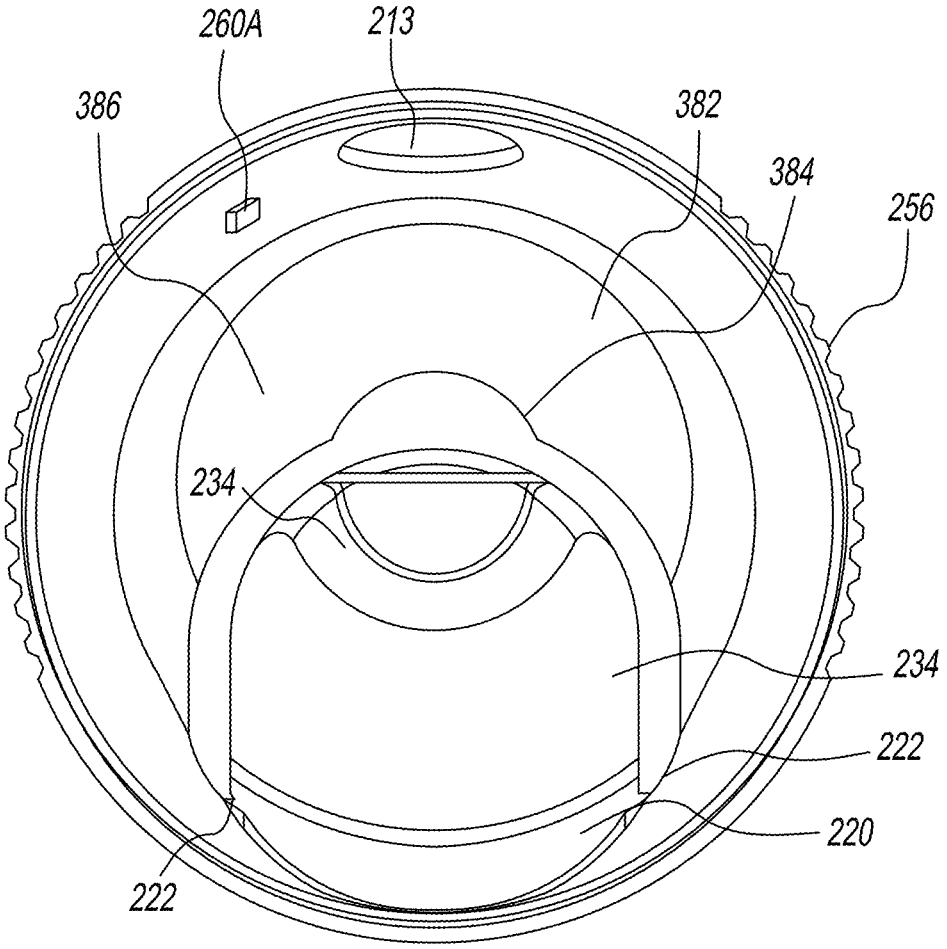

FIG. 53

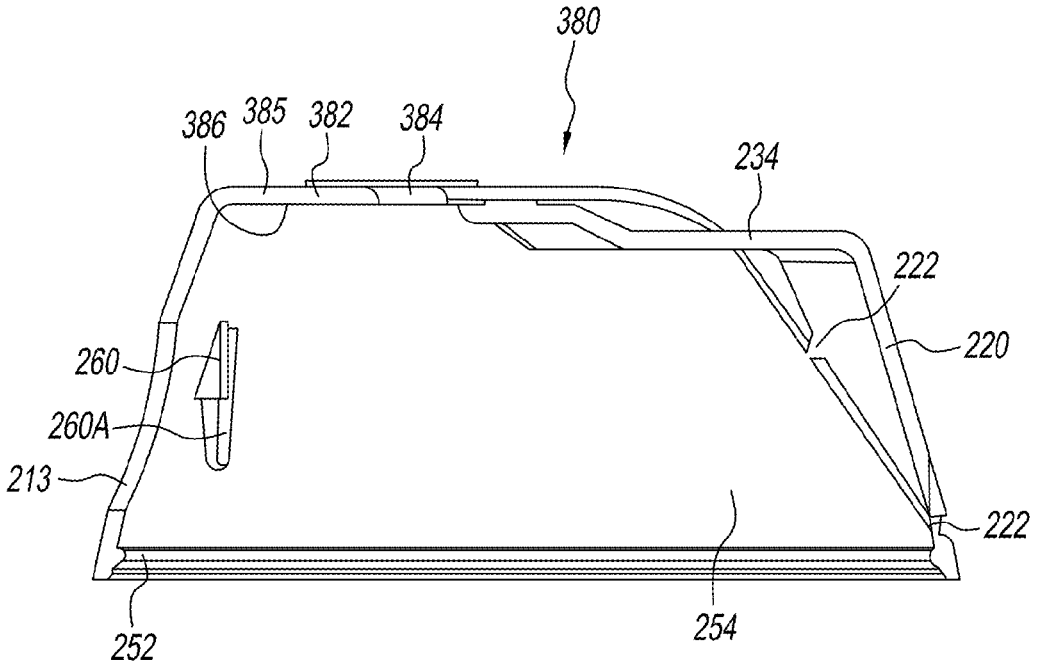
380
386
385
382
384
234
222
220
260
260A
213
222
252
254

FIG. 54

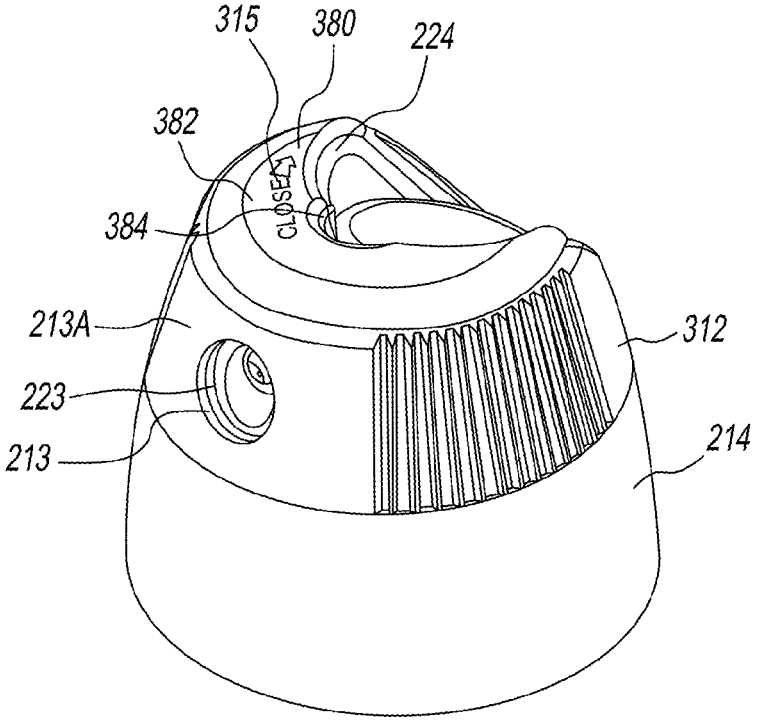
315
380
224
382
CLOSED
384
213A
312
223
214
213

FIG. 55

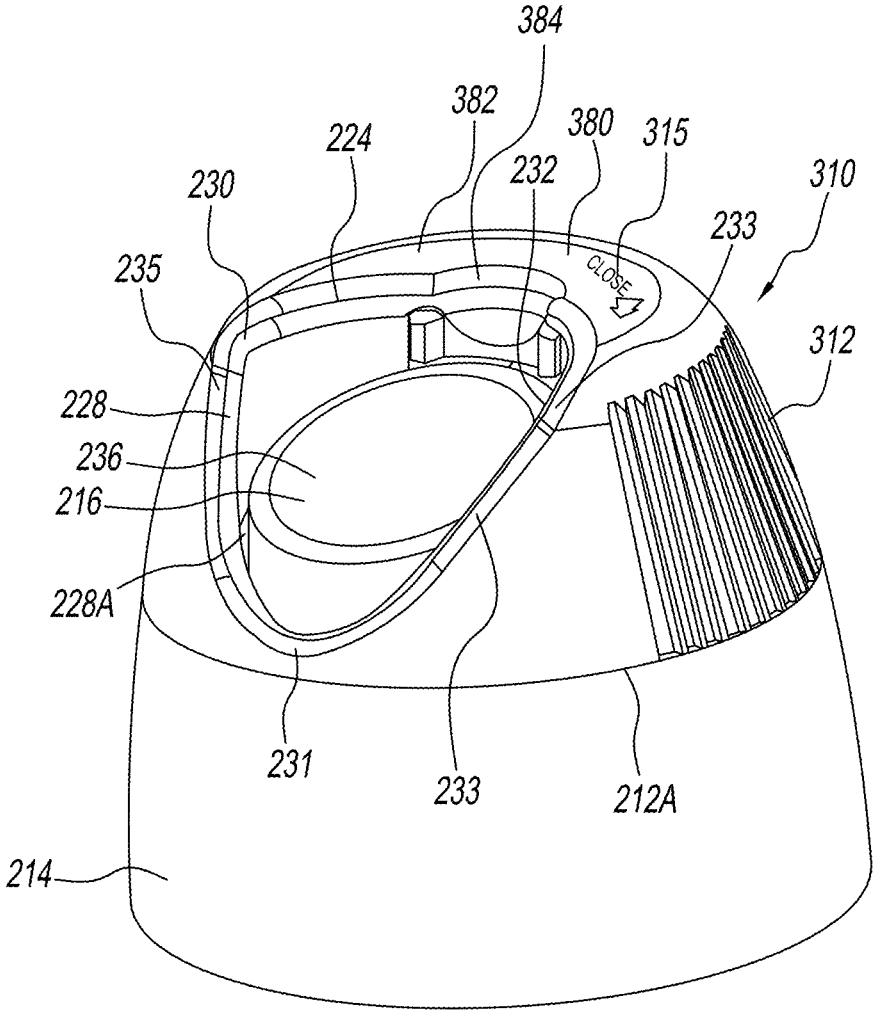
384
382
380
315
224
232
230
310
233
235
CLOSE
312
228
236
216
228A
231
233
212A
214

FIG. 56

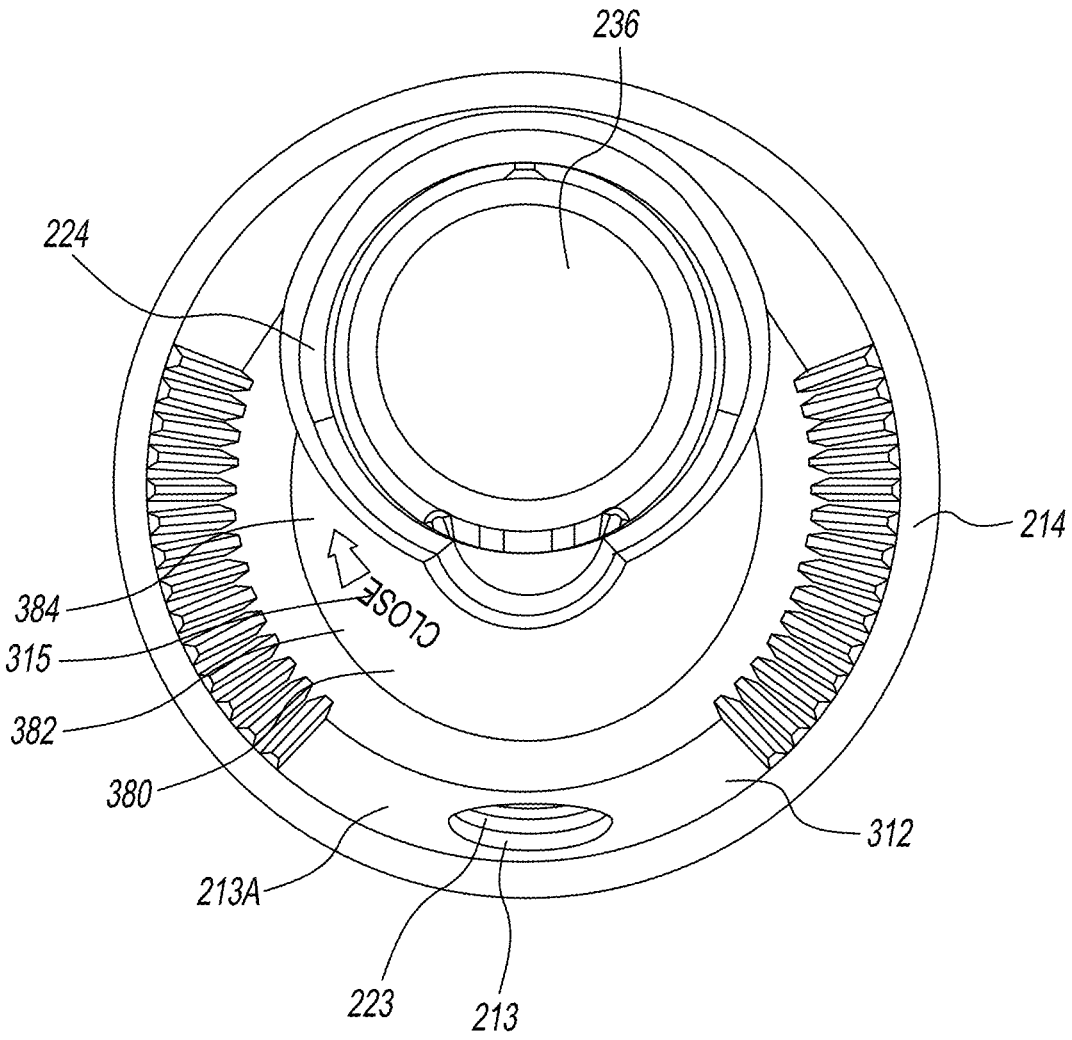

FIG. 57

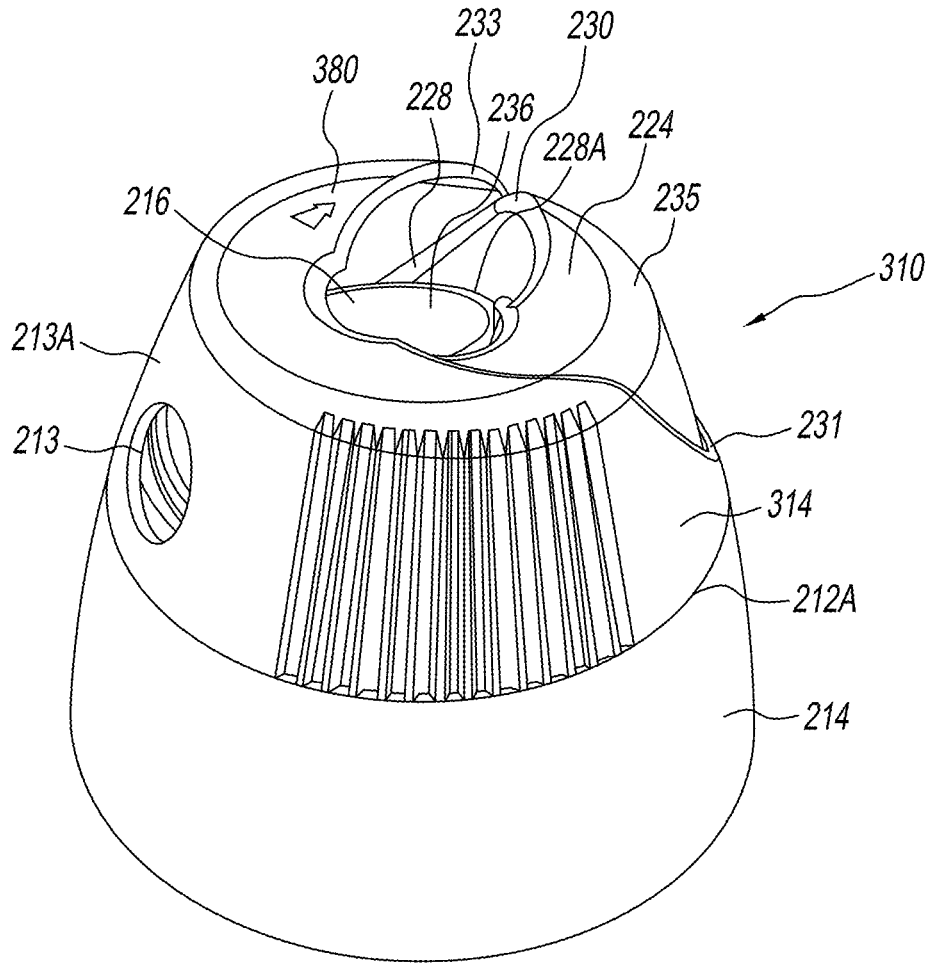
233
230
380
228
236
228A
224
216
235
310
213A
213
231
314
212A
214

FIG. 58

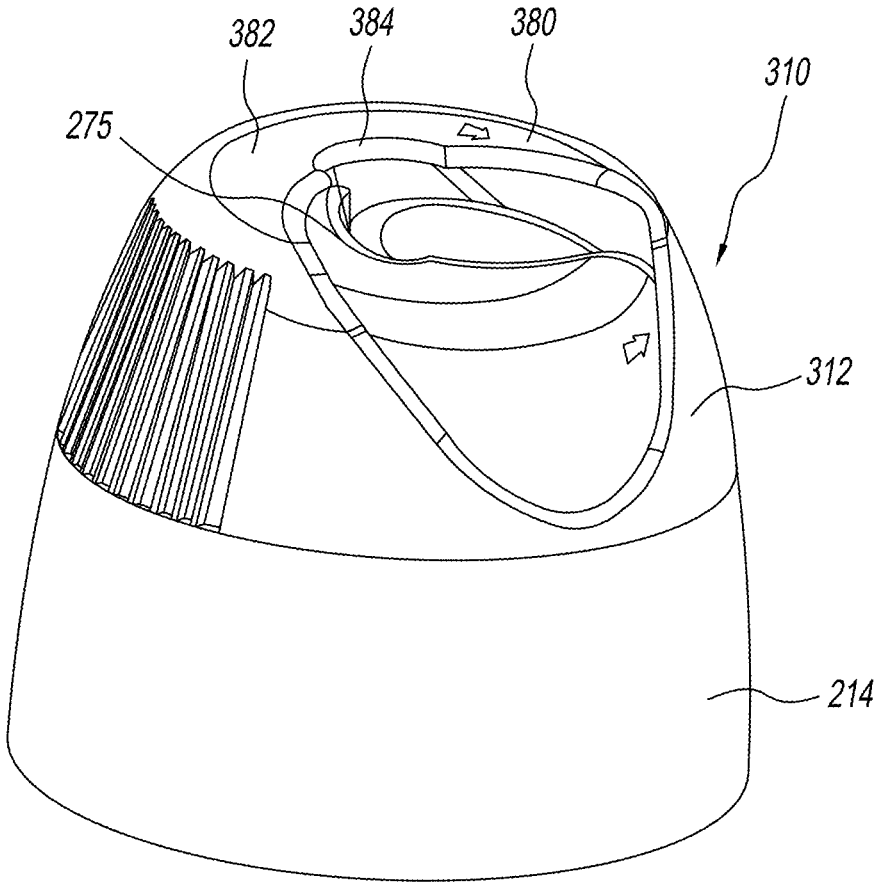

FIG. 59

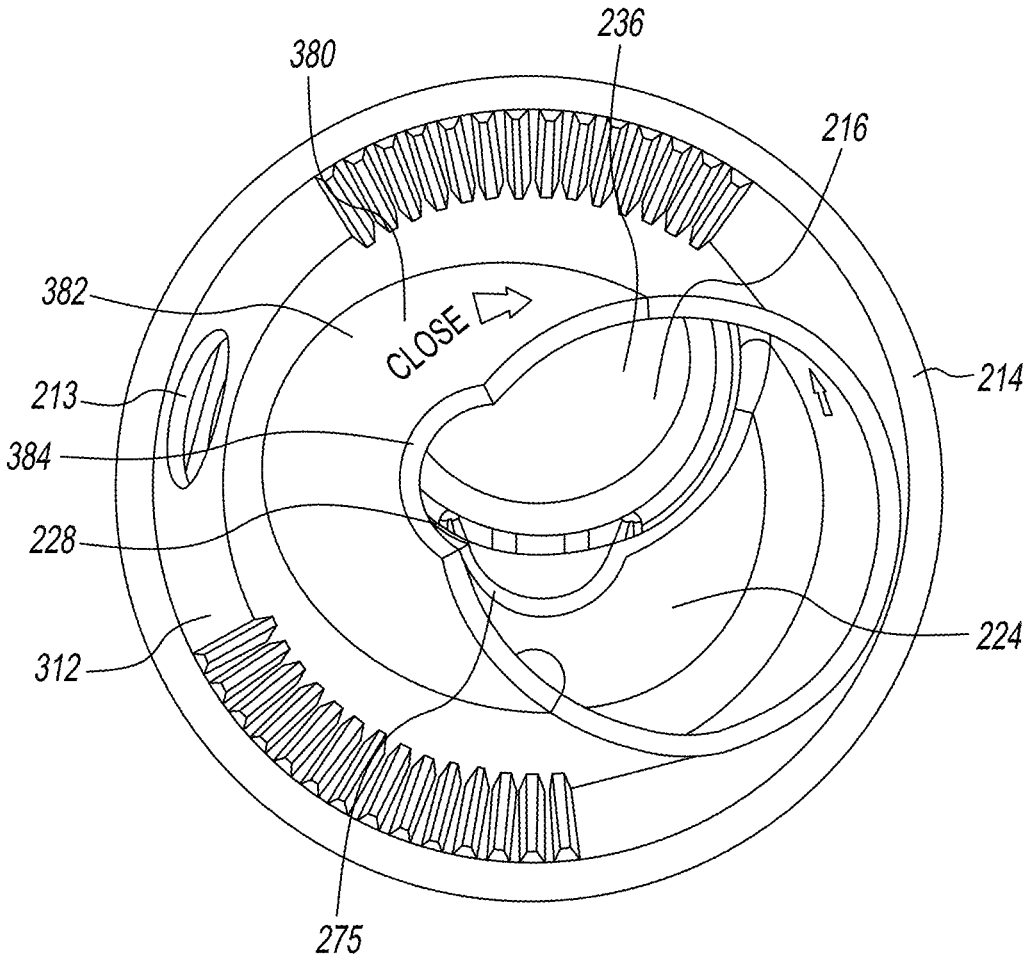

FIG. 60

CAP FOR DISPENSING LIQUIDS OR GELS

BACKGROUND OF THE DISCLOSURE

1. Field of the Disclosure

The present disclosure relates to an assembly for storing and dispensing liquids or gels. More particularly, the present disclosure relates to a cap for dispensing liquids or gels.

2. Description of Related Art

Containers that store and dispense liquids or gels include aerosol containers as are known in the art. Aerosol containers hold a product, for example, a liquid or gel, and a propellant, for example, liquefied-gas propellant under pressure. The propellant urges the product out of the container through an aperture in a cap connected to the container upon a user activating the actuator, such as by a pushbutton located in the cap, to open a valve. Conventional caps undesirably accumulate build-up of the product around the aperture after use. This build-up can lead to clogging of the aperture which is detrimental to operation of the aerosol container and, thus, raises sanitation concerns.

Conventional aerosol containers allow access to the actuator, such as the pushbutton located in the cap, in both open and closed positions. Such containers require a device that prevents movement of the pushbutton even if a force is applied to the pushbutton by the user in the closed position. In addition, these containers do not indicate to a user whether the container has been tampered with prior to use.

Therefore, it has been determined by the present disclosure that there is a need for a cap, which minimizes build-up. There is a further need for a cap that minimizes or prevents a user from accessing the actuator in the closed position. There is a still further need for a dispenser cap with a tamper indicator that minimizes or prevents a user from accessing the actuator prior to use.

BRIEF SUMMARY OF THE DISCLOSURE

The present disclosure provides a cap for a container that stores and dispenses fluids or gels. The cap includes a shroud having a shroud wall surrounding an opening and a collar connected on the shroud so that the collar selectively rotates relative to the shroud. The collar is rotatable between a closed position and an open position. An actuator is connected to the shroud, and the actuator has a contact portion that is in the opening of the shroud. The actuator is movable in both the closed position and the open position by a force that is applied to the contact portion.

The above-described and other features and advantages of the present disclosure will be appreciated and understood by those skilled in the art from the following detailed description, drawings, and appended claims.

BRIEF DESCRIPTION OF THE SEVERAL VIEWS OF THE DRAWINGS

FIG. **1** is a top side perspective view of a first exemplary embodiment of a dispenser cap in an open position and having a tab in a connected position.

FIG. **2** is a top view of the dispenser cap of FIG. **1**.

FIG. **3** is a rear view of the dispenser cap of FIG. **1**.

FIG. **4** is a top side perspective view of the dispenser cap of FIG. **1** in the open position and having the tab removed.

FIG. **5** is a rear view of the dispenser cap of FIG. **4**.

FIG. **6** is a top view of the dispenser cap of FIG. **4**.

FIG. **7** is a top side perspective view of a dispenser cap that is similar to the dispenser cap of FIG. **1** in a closed position and having the tab removed.

FIG. **8** is a top view of the dispenser cap of FIG. **7**.

FIG. **9** is a rear view of the dispenser cap of FIG. **7**.

FIG. **9***a* is a bottom view of the dispenser cap of FIG. **7**.

FIG. **10** is a top side perspective view of an actuator of FIG. **1**.

FIG. **10***a* is a side cross-sectional view of the dispenser cap of FIG. **7** in the open position with the tab being in the connected position.

FIG. **11** is a bottom side perspective view of a collar of the dispenser cap of FIG. **1** having the tab in the connected position.

FIG. **12** is bottom front perspective view of the collar of FIG. **11**.

FIG. **13** is a partial enlarged portion of the collar designated by A in FIG. **12**.

FIG. **14** is a rear side perspective view of the collar of FIG. **11**.

FIG. **15** is a top side perspective view of a shroud of the dispenser cap of FIG. **1**.

FIG. **16** is a partial top view of the shroud of FIG. **15**.

FIG. **17** is a partial cross-sectional view of the dispenser cap of FIG. **1**.

FIG. **18** is a partial cross-sectional view of the dispenser cap of FIG. **1**.

FIG. **19** is a partial cross-sectional view of the dispenser cap of FIG. **1**.

FIG. **20** is a top side perspective view of the dispenser cap of FIG. **1** with the collar shown as transparent.

FIG. **21** is a partial side view of FIG. **20**.

FIG. **22** is a top side perspective view of the dispenser cap of FIG. **1** with the collar shown as transparent and the tab removed.

FIG. **23** is a top side perspective view of the dispenser cap of FIG. **1** with the collar shown as transparent, in the closed position and having the tab removed.

FIG. **24** is a partial side view of FIG. **23**.

FIG. **25** is a side view of a conventional spray assembly.

FIG. **26** is a side view of a spray assembly having the dispenser cap of FIG. **1**.

FIG. **27** is a top front perspective view of a second exemplary embodiment of a dispenser cap of the present disclosure in an open position and having a tab in a connected position.

FIG. **28** is a top rear perspective view of the dispenser cap of FIG. **27**.

FIG. **29** is a top view of the dispenser cap of FIG. **27**.

FIG. **30** is a bottom view of the dispenser cap of FIG. **27**.

FIG. **31** is a side cross-sectional view of the dispenser cap of FIG. **27**.

FIG. **32** is a top front perspective view of the dispenser cap of FIG. **27** in the open position and having and the tab removed.

FIG. **33** is a top rear perspective view of the dispenser cap of FIG. **32**.

FIG. **34** is a top view of the dispenser cap of FIG. **32**.

FIG. **35** is a top front perspective view of the dispenser cap of FIG. **27** in a closed position and having the tab removed.

FIG. **36** is a top rear perspective view of the dispenser cap of FIG. **35**.

FIG. **37** is a top view of the dispenser cap of FIG. **35**.

FIG. **38** is a top front perspective view of a collar of the dispenser cap of FIG. **27**.

FIG. **39** is a top rear perspective view of the collar of FIG. **38**.

FIG. **40** is a top view of the collar of FIG. **38**.

FIG. **41** is a bottom view of the collar of FIG. **38**.

FIG. **42** is a side cross-sectional view of the collar of FIG. **38**.

FIG. **43** is a top front perspective view of a shroud of the dispenser cap of FIG. **27**.

FIG. **44** is a top view of the shroud of FIG. **43**.

FIG. **45** is a top cross-sectional view of the dispenser cap of FIG. **35**.

FIG. **46** is a top cross-sectional view of the dispenser cap of FIG. **32**.

FIG. **47** is a right side view of the dispenser cap of FIG. **32** with a portion of the collar and shroud cut away in the open position.

FIG. **48** is a top front perspective view of a third exemplary embodiment of a dispenser cap in an open position and having a tab in a connected position.

FIG. **49** is a top rear perspective view of the dispenser cap of FIG. **48**.

FIG. **50** is a top view of the dispenser cap of FIG. **48**.

FIG. **51** is a top front perspective view of a collar of the dispenser cap of FIG. **48**.

FIG. **52** is a top view of the collar of FIG. **51**.

FIG. **53** is a bottom view of the collar of FIG. **51**.

FIG. **54** is a side cross-sectional view of the collar of FIG. **51**.

FIG. **55** is a top front perspective view of the dispenser cap of FIG. **48** in an open position and having the tab removed.

FIG. **56** is a top rear perspective view of the dispenser cap of FIG. **55**.

FIG. **57** is a top view of the dispenser cap of FIG. **55**.

FIG. **58** is a top front perspective view of the dispenser cap of FIG. **48** in a closed position and having the tab removed.

FIG. **59** is a top rear perspective view of the dispenser cap of FIG. **58**.

FIG. **60** is a top view of the dispenser cap of FIG. **58**.

DETAILED DESCRIPTION OF THE DISCLOSURE

Referring to the drawings and in particular to FIG. **1**, a first exemplary embodiment of a dispenser cap according to the present disclosure is shown in an opened position and is generally referred to by reference numeral **10**. Dispenser cap **10** has a collar **12**, a shroud **14**, an actuator **16** and an insert **18**. Dispenser cap **10** connects to a container, for example, an aerosol container as is known in the art, for holding a product, for example, a liquid or gel, and a propellant, for example, liquefied-gas propellant under pressure. The propellant may be a hydrocarbon, hydroflourocarbon, carbon dioxide, nitrogen or any other suitable compressed gas. When dispenser cap **10** is connected to an aerosol container, a user applies a force, as shown by arrow F in FIG. **1**, to actuator **16** to open a passageway for the product and/or propellant to pass through actuator **16** and insert **18**. For example, a vertical force of 4.5 pounds is a sufficient force to depress actuator **16**. Collar **12**, shroud **14**, actuator **16** and insert **18** are made of plastic, for example, polypropylene. Collar **12** and shroud **14** may be polypropylene with an erucimide coating.

Referring to FIGS. **1-3**, collar **12** has a hole **13** through a collar wall **13***a* to provide access to actuator **16** and insert **18**, and is connected to a tab **20** in a connected position. As shown in FIGS. **3** and **14**, collar **12** is connected to tab **20** in the connected position by one or more connectors **22**. Connector **22** is made of a material and/or is sized so that each connector **22** is frangible or able to be broken by a user. The user grasps tab **20** and applies a force, for example, as shown by arrow A in FIG. **1**, to break connector **22** and remove tab **20** from collar **12**. Connector **22** is made of a material, for example, Homo-Polymer PolyPropylene. Connector **22** may be sized to have, for example, 0.9 millimeter depth by 1.30 millimeter width by 1.80 millimeter length. In the connected position, tab **20** and connector **22** indicate to a user that dispenser cap **10** has not been used and provides evidence to the user that dispenser cap **10** has not been tampered with.

Referring again to FIG. **1**, shroud **14** has an opening **28***a* surrounded by shroud wall **25** and a hole **23** through shroud wall **25**. Collar **12** is connected to shroud **14** so that shroud **14** has a top shroud portion **24** on a first side of collar **12** and a bottom shroud portion **26** on an opposite side of collar **12**. Shroud **14** has a shape that forms a space **28** between a first side portion **30** and a second side portion **32**.

Collar **12** is connected to shroud **14** so that collar **12** can rotate relative to shroud **14**, as shown by arrow B in FIG. **2**. In the connected position, tab **20** has a top tab portion **34** that is sized to fit between first side portion **30** and second side portion **32** of top shroud portion **24** of shroud **14** to minimize or prevent rotation of collar **12** on shroud **14**.

Referring to FIG. **2**, top tab portion **34** and top shroud portion **24** are sized to minimize or prevent user access to actuator **16** between top tab portion **34** and top shroud portion **24** to minimize or prevent the force, as shown by arrow F in FIG. **1**, from being applied to actuator **16** thereby preventing the contents of the container connected to dispenser cap **10** from being dispensed. Top tab portion **34** is about 30 percent a size of opening **28***a*.

Referring to FIGS. **4-6**, once tab **20** is removed, collar wall **13***a* forms a space **31** between a first collar portion **33** and a second collar portion **35**. Space **31** may be U-shaped. Space **31** is aligned with space **28** in shroud **14** so that space **31** and space **28** allow greater access to actuator **16** ("the open position"). Thus, the force, shown by arrow F in FIG. **1**, can be applied to actuator **16** to dispense the contents of the container connected to dispenser cap **10**. For example, a finger of the user can extend through space **31** in collar **12** and space **28** in shroud **14** to contact actuator **16**. Once tab **20** is removed, collar **12** can rotate relative to shroud **14**, as shown by arrow B in FIGS. **2** and **6**.

Referring to FIG. **7**, a dispenser cap **10***a* is shown that is similar to dispenser cap **10**, however, some of the dimensions and colors differ from dispenser cap **10**. Features of dispenser cap **10***a* that are the same as dispenser cap **10** are identified by the same reference numerals. Dispenser cap **10***a* has tab **20** removed and collar **12** is rotated, as shown by arrow B in FIGS. **2** and **6**, thereby moving hole **13** of collar **12** to a position as shown in FIG. **8**. In this position, hole **13** of collar **12** and hole **23** of shroud **14** are no longer aligned and collar **12** covers hole **23** of shroud **14**. This is the closed position. Referring to FIG. **9**, space **31** of collar **12** is moved after rotation of collar **12** so that it is no longer aligned with space **28** of shroud **14** in this closed position. A finger of the user can no longer extend through space **31** in collar **12** and space **28** in shroud **14** to contact actuator **16**.

Referring to FIG. **8**, collar **12** has a shape that reduces in size from a bottom edge **12***a* to a top edge **12***b*. Top edge **12***b* of collar **12** covers a portion of space **28** above actuator **16** in the closed position to minimize or prevent the finger of the user from accessing actuator **16** between top edge **12***b* of collar **12** and shroud **14** to apply the force, as shown by arrow F in FIG. **1**, on actuator **16**.

Referring to FIGS. **9***a*-**10**, actuator **16** has a contact portion **36** that is in opening **28***a*. Contact portion **36** is connected to a connection portion **38**. Referring to FIG. **10**, a first end **40** of connection portion **38** connects to the container connected to dispenser cap **10**, for example, connection portion **38** con-

nects to a tube that receives the propellant and/or product being dispensed from the container. A second end **42** of connection portion **38** is connected to a first end **46** of a conduit **44**. First end **46** of conduit **44** also connects to contact portion **36**. Conduit **44** has a second end **48** that connects to an insert portion **50**.

Referring to FIG. **9***a*, insert portion **50** is connected to protrusions **50***a* and **50***b* on opposite sides of insert portion **50**. Protrusions **50***a* and **50***b* each fit in one of holders **51** and **53** connected to shroud **14**. Holders **51** and **53** are C-shaped so that each has an opening. Protrusions **50***a* and **50***b* and/or holders **51** and **53** may be flexible so that protrusions **50***a* and **50***b* each fit through the opening of one of holders **51** and **53** and are held therein by snap fit. Protrusions **50***a* and **50***b* and holders **51** and **53** form a cantilevered connection between shroud **14** and actuator **16** so that a force, as shown by arrow F in FIG. **1**, may be applied to contact portion **36** to move contact portion **36** while protrusions **50***a* and **50***b* maintain a connection with holders **51** and **53**. Actuator **16** has flexibility so that when the force, as shown by arrow F in FIG. **1**, is no longer applied to actuator **16**, actuator **16** moves in a direction opposite to the force, as shown by arrow F in FIG. **1**, and returns to its initial position prior to the force being applied.

Insert portion **50** receives insert **18** therein. Conduit **44** connects connection portion **38** to insert portion **50** so that fluid can flow from connection portion **38** through conduit **44**, through insert portion **50**, and through insert **18** out of dispenser cap **10**. As discussed above, the user applies a force, as shown by arrow F in FIG. **1**, to actuator **16** to open a passageway for the product and/or propellant to pass through actuator **16** and insert **18**. Referring to FIG. **10***a*, dispenser cap **10***a* is connected to an aerosol container **200**.

Referring to FIG. **11**, collar **12** has a protrusion **52** on an interior surface **54** thereof. Protrusion **52** is adjacent bottom edge **12***a*, and is continuous about a perimeter of collar **12**. Alternatively, but less preferably, protrusion **52** may be discontinuous. Collar **12** has ridges **56** on an exterior surface **58**. Ridges **56** can assist for gripping by the user during rotation of collar **12**.

Referring to FIGS. **12-13**, interior surface **54** has a collar rib **60**. Collar rib **60** protrudes from interior surface **54**. Collar rib **60** extends in a direction from top edge **12***b* to bottom edge **12***a* of collar **12**. Collar rib **60** has a tip **61** that is flexible. Collar **12** may have collar rib **60** molded on interior surface **54**.

Referring to FIGS. **15-16**, shroud **14** has a middle shroud portion **62** between top shroud portion **24** and bottom shroud portion **26**. Middle shroud portion **62** has an outer surface **64** that forms a depression **66**. Depression **66** has a first side wall **66***a*, a second side wall **66***b* and a bottom wall **66***c* between first side wall **66***a* and second side wall **66***b*. Middle shroud portion **62** has a first shroud rib **68** and a second shroud rib **70** in depression **66**. First shroud rib **68** and second shroud rib **70** may be rigid. First shroud rib **68** and second shroud rib **70** may be molded in depression **66**. Outer surface **64** of middle shroud portion **62** forms a groove **72**. Groove **72** is adjacent to bottom shroud portion **26**. Groove **72** is sized and shaped to receive protrusion **52** of collar **12** as shown in FIGS. **12-13**.

Referring to FIG. **17**, collar **12** is connected to shroud **14** by positioning protrusion **52** of collar **12** in groove **72** of shroud **14**. This connection can be, for example, a snap fit. Groove **72** and protrusion **52** allow for rotation of collar **12** relative to shroud **14**. Groove **72** and protrusion **52** maintain collar **12** connected to shroud **14**. Collar **12** and shroud **14** include erucamide slip additive, for example, 4 grams per kilogram of polypropylene that achieves ease of rotation of collar **12** while not affecting the retention of collar **12** on shroud **14**.

Referring to FIGS. **18-19**, collar **12** is connected to shroud **14** so that collar rib **60** extends into depression **66** formed by outer surface **64** of shroud **14**. Collar rib **60** extends into depression **66** so that during rotation tip **61** of collar rib **60** contacts first shroud rib **68** and second shroud rib **70** deforming tip **61** of collar rib **60** and/or collar **12** allowing tip **61** of collar rib **60** to pass around each of first shroud rib **68** and second shroud rib **70**. Collar rib **60** and tip **61** may be made of material, for example, homo-polymer polypropylene. The contact between tip **61** of collar rib **60** and each of first shroud rib **68** and second shroud rib **70** generates an audible noise or "click".

Referring to FIGS. **20-21**, when tab **20** is in the connected position, dispenser cap **10** is in the open position. When dispenser cap **10** is in the open position, collar rib **60** is between second shroud rib **70** and second sidewall **66***b* of depression **66** formed in shroud **14**. Top tab portion **34** and top shroud portion **24** are sized to minimize or prevent user access to actuator **16** between top tab portion **34** and top shroud portion **24** to thereby minimize or prevent the force, as shown by arrow F, from being applied to contact portion **36** of actuator **16** that would dispense the contents of the container connected to dispenser cap **10** when tab **20** is connected. The user grasps tab **20** and applies the force, for example, as shown by arrow A, to break connectors **22** and remove tab **20** from collar **12**. Tab **20** has an indicator **34***a* indicating to a user a direction to apply a force to tab **20** to remove tab **20**, for example, "TEAR OFF" with an arrows in the direction A is molded into tab portion **34**.

Referring to FIG. **22**, once tab **20** is removed, the finger of the user can extend through space **31** in collar **12** and space **28** in shroud **14** to contact actuator **16** to apply the force, as shown by arrow F, to dispense the contents of the container connected to dispenser cap **10**. Dispenser cap **10** is maintained in the open position until a predetermined force is applied sufficient to move tip **61** of collar rib **60** to pass around second shroud rib **70**.

Once tab **20** is removed, collar **12** can rotate relative to shroud **14**, as shown by arrow B, by application of a predetermined force. Shroud **14** has an indicator **15** to indicate to a user a direction to rotate collar **12** to move to the closed position, for example, "CLOSE" with an arrow is molded into top shroud portion **24**. As collar **12** is rotated, for example, about 60 degrees, tip **61** of collar rib **60** passes over each of first shroud rib **68** and second shroud rib **70** to move to the closed position, as shown in FIGS. **23** and **24**. The contact between tip **61** of collar rib **60** and each of first shroud rib **68** and second shroud rib **70** generates two audible noises or "clicks". The first click of the two clicks is generated as tip **61** of collar rib **60** is moved from the open position, and, then, the second click is generated as tip **61** of collar rib **60** is moved into the closed position. In the closed position, tip **61** of collar rib **60** is between first shroud rib **68** and first sidewall **66***a* of depression **66**. Dispenser cap **10** is maintained in the closed position until a predetermined force is applied sufficient to move tip **61** of collar rib **60** to pass around first shroud rib **68**. Top edge **12***b* of collar **12** covers a portion of contact portion **36** and space **31** of collar **12** is moved after rotation of collar **12** so that it is no longer aligned with space **28** of shroud **14** in the closed position. Access to actuator **16** is prevented or minimized in the closed position so that the user cannot apply the force, shown by arrow F, to dispense the contents of the container as collar **12** blocks access to actuator **16** and covers or hides hole **23** in shroud **14**. However, contact portion **36** is movable in the closed position. Collar wall **13***a* may contact shroud wall **25** surrounding hole **23** in the closed position.

Collar **12** can rotate relative to shroud **14**, as shown by arrow C in FIG. **23**. As collar **12** is rotated, for example, about 60 degrees, collar rib **60** pass around each of first shroud rib **68** and second shroud rib **70** to move to the open position, as shown in FIG. **22**. Shroud **14** has an indicator **17** for indicating to a user a direction to rotate collar **12** to move to the open position, for example, "OPEN" with an arrow is molded into middle shroud portion **62**. The contact between tip **61** of collar rib **60** and each of first shroud rib **68** and second shroud rib **70** generates two audible noises or "clicks". The first click of the two clicks is generated as tip **61** of collar rib **60** is moved from the closed position, and, then, the second click is generated as tip **61** of collar rib **60** is moved into the open position. Once tab **20** is removed, dispenser cap **10** can selectively move to and from the open and closed positions as the user desires. Collar rib **60** rotates between first side wall **66***a* and second side wall **66***b* of depression **66** so that first side wall **66***a* and second side wall **66***b* restrict rotation of collar rib **60**.

Referring to FIG. **25**, a conventional gel dispenser is shown. After use, there is a build-up of gel. In contrast, FIG. **26** shows a dispenser assembly including dispenser cap **10**. After use, there is no build-up of gel on dispenser cap **10** in contrast to FIG. **25**, or is hidden from view by collar **12** covering hole **23** in shroud **14**. Advantageously, dispenser cap **10** minimizes or prevents undesirable build-up as well as minimizes or prevents dispensing of contents of a container connected to dispenser cap **10** by obstructing access to actuator **16** in the closed position or prior to use.

Referring to FIG. **27**, a second exemplary embodiment of a dispenser cap according to the present disclosure is shown in an opened position and is generally referred to by reference numeral **210**. Dispenser cap **210** has a collar **212**, a shroud **214**, as shown in FIGS. **30** and **31**, an actuator **216** and, as shown in FIG. **27**, an insert **218**. Dispenser cap**210** connects to a container, for example, an aerosol container as discussed above for dispenser cap **10**. Collar **212**, shroud **214**, actuator **216** and insert **218** are made of plastic, for example, polypropylene. Collar **212** and shroud **214** may be polypropylene with an erucimide coating.

Referring to FIGS. **27-29**, collar **212** has a hole **213** through a collar wall **213***a* to provide access to actuator **216** and insert **218**, and is connected to a tab **220** in a connected position. As shown in FIG. **28**, collar **212** is connected to tab **220** in the connected position by one or more connectors **222**. Connector **222** is made of a material and/or is sized so that each connector **222** is frangible or able to be broken by a user. The user grasps tab **220** and applies a force, for example, as shown by arrow A**2** in FIG. **27**, to break connector **222** and remove tab **220** from collar **212**. Connector **222** is made of a material, for example, homo-polymer polypropylene. Connector **222** may be sized to have, for example, 0.9 millimeter depth by 1.30 millimeter width by 1.80 millimeter length. In the connected position, tab **220** and connector **222** indicate to a user that dispenser cap **210** has not been used and provides evidence to the user that dispenser cap **210** has not been tampered with.

Referring again to FIG. **27**, shroud **214** has an opening **228***a* surrounded by shroud wall **225** and a hole **223** through shroud wall **225**. Collar **212** is connected to shroud **214** so that shroud **214** has a top shroud portion **224** on a first side of collar **212** and a bottom shroud portion **226** on an opposite side of collar **212**. Shroud **214** has a shape that forms a space **228** between a first side portion **230** and a second side portion **232**.

Collar **212** is connected to shroud **214** so that collar **212** can rotate relative to shroud **214**, as shown by arrow B**2**. In the connected position, tab **220** has a top tab portion **234** that is sized to fit between first side portion **230** and second side portion **232** of top shroud portion **224** of shroud **214** to minimize or prevent rotation of collar **212** on shroud **214**. Top tab portion **234** is between 20 percent to 100 percent of a size of opening **228***a*, and, most preferably 75 percent to 95 percent the size of opening **228***a*.

Referring to FIGS. **29** and **31**, top tab portion **234** and top shroud portion **224** are sized to minimize or prevent user access to actuator **216** between top tab portion **234** and top shroud portion **224** to minimize or prevent the force, as shown by arrow F**2** in FIG. **32**, from being applied to actuator **216** thereby preventing the contents of the container connected to dispenser cap **210** from being sprayed. For example, a vertical force of 4.5 pounds is a sufficient force to depress actuator **216**. Shroud has two or more protrusions **277** to support the underside of top tab portion **234** and minimize or prevent top tab portion **234** from being depressed. Top shroud portion **224** has a depression **275** that provides a space **276** between top shroud portion **224** and top tab portion **234**. Top tab portion **234** has a planar portion **263** that connects to side tab portion **221** and a protruding portion **265** that protrudes away from side tab portion **221** and is a free end of tab **220**, as shown in FIG. **42**. The user inserts a finger in space **276** to apply a force, for example, as shown by arrow A**2**, to break connector **222** and remove tab **220** from collar **212**. The user may also place a portion of the user's finger under protruding portion **265** of top tab portion **234** while applying the force, for example, as shown by arrow A**2**, to break connector **222** and remove tab **220** from collar **212**. Depression **275** allows a contact portion **236** of actuator **216** to be entirely covered by top tab portion **234** to prevent access to contact portion **236** prior to removal of tab **220**.

Referring to FIGS. **32-34**, once tab **220** is removed, collar wall **213***a* forms a space **231** between a first collar portion **233** and a second collar portion **235**. Space **231** may be U-shaped. Space **231** is aligned with space **228** in shroud **214** so that space **231** and space **228** allow greater access to actuator **216** ("the open position"). Thus, the force, shown by arrow F**2** in FIG. **32**, can be applied to actuator **216** to dispense the contents of the container connected to dispenser cap **210**. For example, a finger of the user can extend through space **231** in collar **212** and space **228** in shroud **214** to contact actuator **216**. Once tab **220** is removed, collar **212** can rotate relative to shroud **214**, as shown by arrow B**2**. When dispenser cap **210** is connected to an aerosol container, a user applies a force, as shown by arrow F**2** in FIG. **32**, to actuator **216** to open a passageway for the product and/or propellant to pass through actuator **216** and insert **218**.

Referring to FIGS. **35-37**, dispenser cap **210** has tab **220** (not shown) removed and collar **212** is rotated, as shown by arrow B**2** in FIGS. **32-34**, thereby moving hole **213** of collar **212** to a position as shown in FIGS. **35-37**. In this position, hole **213** of collar **212** and hole **223** of shroud **214** are no longer aligned and collar **212** covers hole **223** of shroud **214**. This is the closed position. Space **231** of collar **212** is moved after rotation of collar **212** so that it is no longer aligned with space **228** of shroud **214** in this closed position. A finger of the user can no longer extend through space **231** in collar **212** and space **228** in shroud **214** to contact actuator **216**.

Collar **212** has a shape that reduces in size from a bottom edge **212***a* to a top edge **212***b*. Top edge **212***b* of collar **212** covers a portion of space **228** above actuator **216** in the closed position to minimize or prevent the finger of the user from accessing actuator **216** between top edge **212***b* of collar **212** and shroud **214** to apply the force, as shown by arrow F**2** in FIG. **36**, on actuator **216**.

Referring to FIG. **30**, actuator **216** is the same as actuator **16** and has a contact portion **236** that is in opening **228***a*. Contact portion **236** is connected to a connection portion **238**. A first end **240** of connection portion **238** connects to the container connected to dispenser cap **210**, for example, connection portion **238** connects to a tube that receives the propellant and/or product being dispensed from the container. A second end **242** of connection portion **238** is connected to a first end **246** of a conduit **244**. First end **246** of conduit **244** also connects to contact portion **236**. Conduit **244** has a second end **248** that connects to an insert portion **250**.

Insert portion **250** is connected to protrusions **250***a* and **250***b* on opposite sides of insert portion **250**. Protrusions **250***a* and **250***b* each fit in one of holders **251** and **253** connected to shroud **214**. Holders **251** and **253** are C-shaped so that each has an opening. Protrusions **250***a* and **250***b* and/or holders **251** and **253** may be flexible so that protrusions **250***a* and **250***b* each fit through the opening of one of holders **251** and **253** and are held therein by snap fit. Protrusions **250***a* and **250***b* and holders **251** and **253** form a cantilevered connection between shroud **214** and actuator **216** so that a force, as shown by arrow F**2** in FIG. **32**, may be applied to contact portion **236** to move contact portion **236** while protrusions **250***a* and **250***b* maintain a connection with holders **251** and **253**. Actuator **216** has flexibility so that when the force, as shown by arrow F**2** in FIG. **32**, is no longer applied to actuator **216**, actuator **216** moves in a direction opposite to the force, as shown by arrow F**2** in FIG. **32**, and returns to its initial position prior to the force being applied.

Insert portion **250** receives insert **218** therein. Conduit **244** connects connection portion **238** to insert portion **250** so that fluid can flow from connection portion **238** through conduit **244**, through insert portion **250**, and through insert **218** out of dispenser cap **210**. As discussed above, the user applies a force, as shown by arrow F**2** in FIG. **32**, to actuator **216** to open a passageway for the product and/or propellant to pass through actuator **216** and insert **218**. Dispenser cap **210** is connected to an aerosol container the same as dispenser cap **10***a*.

Referring to FIGS. **38-42**, collar **212** has a protrusion **252** on an interior surface **254** thereof. Protrusion **252** is adjacent bottom edge **212***a*, and is continuous about a perimeter of collar **212**. Alternatively, but less preferably, protrusion **252** may be discontinuous. Collar **212** has ridges **256** on an exterior surface **258**. Ridges **56** can assist for gripping by the user during rotation of collar **212**.

Referring to FIGS. **41-42**, interior surface **254** has a collar rib **260**. Collar rib **260** protrudes from interior surface **254**. Collar rib **260** extends in a direction from top edge **212***b* to bottom edge **212***a* of collar **212**. Collar rib **260** provides a stop to prevent rotation of collar **212** and stiffens a flexible rib **260***a*. Collar **212** may have collar rib **260** molded on interior surface **254**. Flexible rib **260***a* is flexible and deflects during rotation and creates a "click" sound or audible sound.

Referring to FIGS. **43-44**, shroud **214** has a middle shroud portion **262** between top shroud portion **224** and bottom shroud portion **226**. Middle shroud portion **262** has an outer surface **264** that forms a depression **266**. Depression **266** has a first side wall **266***a*, a second side wall **266***b* and a bottom wall **266***c* between first side wall **266***a* and second side wall **266***b*. Middle shroud portion **262** has a post **267** that is a single rib in depression **266**. Post **267** may be rigid. Post **267** may be molded in depression **266**. Outer surface **264** of middle shroud portion **262** forms a groove **272**. Groove **272** is adjacent to bottom shroud portion **226**. Groove **272** is sized and shaped to receive protrusion **252** of collar **212**.

Referring to FIG. **44**, shroud **214** has an inner wall **273** that surrounds opening **228***a*. Inner wall **273** has protrusions **277**. Protrusions **277** provide support to top tab portion **234** when tab **220** is in the connected position. Protrusions **277** increase resistance of top tab portion **234** to deflection under load, and, in particular, increases a top load strength of top tab portion **234**.

Referring to FIG. **31**, collar **212** is connected to shroud **214** by positioning protrusion **252** of collar **212** in groove **272** of shroud **214**. This connection can be, for example, a snap fit. Groove **272** and protrusion **252** allow for rotation of collar **212** relative to shroud **214**. Groove **272** and protrusion **252** maintain collar **212** connected to shroud **214**. Collar **212** and shroud **214** include erucamide slip additive, for example, 4 grams per kilogram of polypropylene that achieves ease of rotation of collar **212** while not affecting the retention of collar **212** on shroud **214**.

Referring to FIGS. **45-47**, collar **212** is connected to shroud **214** so that flexible rib **260***a* extends into depression **266** formed by outer surface **264** of shroud **214**. Flexible rib **260***a* extends into depression **266** so that during rotation a portion of flexible rib **260***a* contacts post **267** deforming flexible rib **260***a* and/or collar **212** allowing flexible rib **260***a* to pass around post **267**. Flexible rib **260***a* may be made of material, for example, homo-polymer polypropylene. The contact between flexible rib **260***a* and post **267** generates an audible noise or "click".

Referring to FIG. **46**, when tab **220** is in the connected position, dispenser cap **210** is in the open position. When dispenser cap **210** is in the open position, flexible rib **260***a* is between post **267** and second sidewall **266***b* of depression **266** formed in shroud **214**. Top tab portion **234** and top shroud portion **224** are sized to minimize or prevent user access to actuator **216** between top tab portion **234** and top shroud portion **224** to thereby minimize or prevent the force, as shown by arrow F**2**, from being applied to contact portion **236** of actuator **216** that would dispense the contents of the container connected to dispenser cap **210** when tab **220** is connected. The user grasps tab **220** by inserting a finger in space **276** and applies the force, for example, as shown by arrow A**2**, to break connectors **222** and remove tab **220** from collar **212**.

As shown in FIG. **29**, tab **220** has an indicator **234***a* indicating to a user a direction to apply a force to tab **220** to remove tab **220**, for example, "TEAR OFF" with an arrow in the direction A**2** is molded into tab portion **234**.

Referring back to FIG. **33**, once tab **220** is removed, the finger of the user can extend through space **231** in collar **212** and space **228** in shroud **214** to contact actuator **216** to apply the force, as shown by arrow F**2**, to spray the contents of the container connected to dispenser cap **210**. Dispenser cap **210** is maintained in the open position until a predetermined force is applied sufficient to move flexible rib **260***a* to pass around post **267**.

Once tab **220** is removed, collar **212** can rotate relative to shroud **214**, as shown by arrow B**2**, by application of a predetermined force. Shroud **214** has an indicator **215** to indicate to a user a direction to rotate collar **212** to move to the closed position, for example, "CLOSE" with an arrow is molded into top shroud portion **224**. As collar **212** is rotated, for example, about 60 degrees, flexible rib **260***a* passes around post **267** to move to the closed position, as shown in FIGS. **35-37**. The contact between flexible rib **260***a* and post **267** generates an audible noise or "click". Flexible rib **260***a* interacts with post **267** by creating a single pronounced clicking positional-indicating noise each time the rotation of collar **212** in either direction moves flexible rib **260***a* past post **267**. As shown in FIG. **45**, in the closed position, flexible rib **260***a* is between

post **267** and first sidewall **266***a* of depression **266**. Dispenser cap **10** is maintained in the closed position until a predetermined force is applied sufficient to move flexible rib **260***a* to pass around post **267**. Top edge **212***b* of collar **212** covers a portion of contact portion **236** and space **231** of collar **212** is moved after rotation of collar **212** so that it is no longer aligned with space **228** of shroud **214** in the closed position. Access to actuator **216** is prevented or minimized in the closed position so that the user cannot apply the force, shown by arrow F**2**, to dispense the contents of the container as collar **212** blocks access to actuator **216** and covers or hides hole **223** in shroud **214**. However, contact portion **236** is movable in the closed position. Collar wall **213***a* may contact shroud wall **225** surrounding hole **223** in the closed position.

Collar **212** can rotate relative to shroud **214**, as shown by arrow C**2** in FIG. **35-36**. As collar **212** is rotated, for example, about 60 degrees, flexible rib **260***a* passes around post to move to the open position, as shown in FIG. **32**. As shown in FIG. **35**, shroud **214** has an indicator **217** for indicating to a user a direction to rotate collar **212** to move to the open position, for example, "OPEN" with an arrow is molded into middle shroud portion **262**. The contact between flexible rib **260***a* and post **267** generates an audible noise or "click". Flexible rib **260***a* interacts with post **267** by creating a single pronounced clicking positional-indicating noise when flexible rib **260***a* passes post **267**. Once tab **220** is removed, dispenser cap **210** can selectively move to and from the open and closed positions as the user desires. Flexible rib **260***a* rotates between first side wall **266***a* and second side wall **266***b* of depression **266** so that first side wall **266***a* and second side wall **266***b* restrict rotation of flexible rib **260***a* and collar **212**.

Referring to FIGS. **48-50**, a third exemplary embodiment of a dispenser cap according to the present disclosure is shown in an opened position and is generally referred to by reference numeral **310**. Dispenser cap **310** is the same as dispenser cap **210**, however, dispenser cap **310** has a collar **312** that is different than collar **212**. Collar **312** is the same as collar **212** except collar **312** has a top collar portion **380** instead of top edge **212***b*. Accordingly, the same reference numerals from dispenser cap **210** will be used for dispenser cap **310** for the same features.

Top collar portion **380** has a wall **382**. Wall **382** of top collar portion has a depression **384**. Wall **382** and depression **384** of top collar portion **380** have a complementary shape to top shroud portion **224**.

Referring to FIGS. **51-54**, wall **382** of top collar portion **380** has an outer surface **385** and inner surface **386**. Outer surface **385** of top collar portion has an indicator **315** to indicate to a user a direction to rotate collar **312** to move to the closed position, for example, "CLOSE" with an arrow is molded into top collar portion **380**.

As shown in FIGS. **48-50** and **55-57**, top collar portion **380** covers top shroud portion **224** in the open position.

As shown in FIGS. **58-60**, top collar portion **380** covers a portion of space **228** above actuator **216** in the closed position to minimize or prevent the finger of the user from accessing actuator **216** between top collar portion **380** and shroud **214** to apply the force, as shown by arrow F**2** in FIG. **36**, on actuator **216**. Hole **213** is positioned over recess **266** in the closed position.

A dispenser assembly including caps **210** and **310** reduces build-up of gel on dispenser caps **210** and **310** in contrast to FIG. **25**, or any build-up of gel is hidden from view by collars **212** and **312** covering hole **223** in shroud **214**. Advantageously, dispenser caps **210** and **310** minimize or prevent undesirable build-up as well as minimize or prevent dispensing of contents of a container connected to dispenser caps **210** and **310** by obstructing access to actuator **216** in the closed position or prior to use.

Dispenser caps **10**, **210** and **310** deter in store spraying by consumers or users by tabs **20** and **220**. Dispenser caps **10**, **210** and **310** prevent unintentional actuation by users by tabs **20** and **220** as well as collars **12**, **212** and **312** blocking access to actuator **16** and **216** and covering or hiding hole **23** and **223** in shroud **14** and **214**.

Dispenser cap **10** has actuator **16** and dispenser caps **210** and **310** have actuator **216** that is moveable in both the open position and the closed position. This feature allows use of existing actuators with these dispenser caps. Further, dispenser caps **10**, **210** and **310** do not require mechanisms to prevent movement of actuators **16** and **216**, respectively, increasing ease of manufacture and assembly of these dispenser caps over prior art dispenser caps that prevent movement of actuators in a non-use position. Enhanced ergonomics are also provided by the position of actuator **16** being recessed in shroud **14** and actuator **216** being recessed in shroud **214**. If a user does not wish to exert the effort to move collars **12**, **212** and **312**, actuators **16** and **216** may always be depressed.

It should also be noted that the terms "first", "second", "third", "upper", "lower", and the like may be used herein to modify various elements. These modifiers do not imply a spatial, sequential, or hierarchical order to the modified elements unless specifically stated.

While the present disclosure has been described with reference to one or more exemplary embodiments, it will be understood by those skilled in the art that various changes may be made and equivalents may be substituted for elements thereof without departing from the scope of the present disclosure. In addition, many modifications may be made to adapt a particular situation or material to the teachings of the disclosure without departing from the scope thereof. Therefore, it is intended that the present disclosure not be limited to the particular embodiment(s) disclosed as the best mode contemplated, but that the disclosure will include all embodiments falling within the scope of the appended claims.

What is claimed is:

1. A cap for a container that stores and dispenses fluids or gels comprising:

a shroud having a shroud wall surrounding an opening;

a collar connected on the shroud so that the collar selectively rotates relative to the shroud in a first direction and a second direction opposite the first direction, the collar being rotatable between a closed position and an open position, the collar having rotation restricted in the first direction in the open position and the collar having rotation restricted in the second direction in the closed position; and

an actuator being connected to the shroud and having a contact portion, the contact portion being in the opening of the shroud, the actuator being movable in both the closed position and the open position by a force that is applied to the contact portion, and at least a portion of the actuator being uncovered by the cover in the closed position and in the open position.

2. The cap of claim **1**, wherein the collar has a top edge opposite a bottom edge, and wherein the collar is reduced in size from the bottom edge to the top edge.

3. The cap of claim **2**, wherein the shroud wall partially surrounds the contact portion.

4. The cap of claim **3**, wherein the top edge of the collar covers a portion of the contact portion in the closed position.

5. The cap of claim 4, wherein the top edge of the collar uncovers a portion of the contact portion in the open position.

6. The cap of claim 1, wherein the shroud wall has an outer surface that forms a depression with at least a first shroud rib in the depression.

7. The cap of claim 6, wherein the collar s an interior surface with a collar rib that protrudes from the interior surface.

8. The cap of claim 7, wherein the collar is connected to the shroud so that the collar rib extends into the depression formed by the outer surface of the shroud, and wherein the collar rib extends into the depression so that during rotation of the collar a portion of the collar rib contacts the first shroud rib deforming the collar rib and/or the collar so that the collar rib passes around the first shroud rib.

9. The cap of claim 8, wherein the contact between the collar rib and the first shroud rib generates an audible noise.

10. The cap of claim 1, wherein the collar has a collar wall that form collar space between a first collar portion and a second collar portion.

11. The cap of claim 10, wherein the shroud has a shape that forms a shroud space between a first side portion and a second side portion, and wherein the collar space is aligned with the shroud space in the open position and at least a portion of collar wall covers at least a portion of the shroud space in the closed position.

12. The cap of claim 11, wherein the collar is connected to a tab in the collar space in a connected position, and wherein the tab has a top tab portion that is sized to fit between the first side portion and second side portion of the shroud to prevent rotation of the collar on the shroud.

13. The cap of claim 10, wherein the collar is connected to a tab in the collar space in a connected position, and wherein the tab has a top tab portion that covers at least a portion of the actuator.

14. The cap of claim 1, wherein the collar has a collar wall having a collar hole through the collar wall and the shroud has a shroud hole through the shroud wall, and wherein the collar hole and the shroud hole are aligned in the open position.

15. The cap of claim 1, wherein the collar has a collar wall having a collar hole through the collar wall and the shroud has a shroud hole through the shroud wall, and wherein the collar wall covers the shroud hole in the closed position.

16. The cap of claim 15, wherein the collar wall contacts the shroud wall surrounding the shroud hole in the closed position.

17. The cap of claim 13, wherein the top tab portion covers 75 percent to 95 percent of the opening of the shroud.

18. The cap of claim 13, wherein the top tab portion has a depression and the depression and the shroud form a space therebetween that is accessible by a user's finger to apply a pressure to the tab for removal.

19. The cap of claim 1, wherein the collar has a top collar portion opposite a bottom edge, and wherein the top collar portion covers a portion of the contact portion in the closed position.

20. The cap of claim 18, wherein the top collar portion has a depression and the depression and the shroud form a space therebetween that is accessible by a user's finger to apply a pressure to the tab for removal.

21. The cap of claim 1, wherein the shroud wall has an outer surface that forms a depression with a post in the depression, and wherein the collar has an interior surface with a collar rib that protrudes from the interior surface that interacts with the post by creating a single pronounced clicking positional-indicating noise when the collar rib passes the post.

22. The cap of claim 1, wherein the cap deters in store spraying by users.

23. The cap of claim 1, wherein the cap prevents unintentional actuation by users.

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